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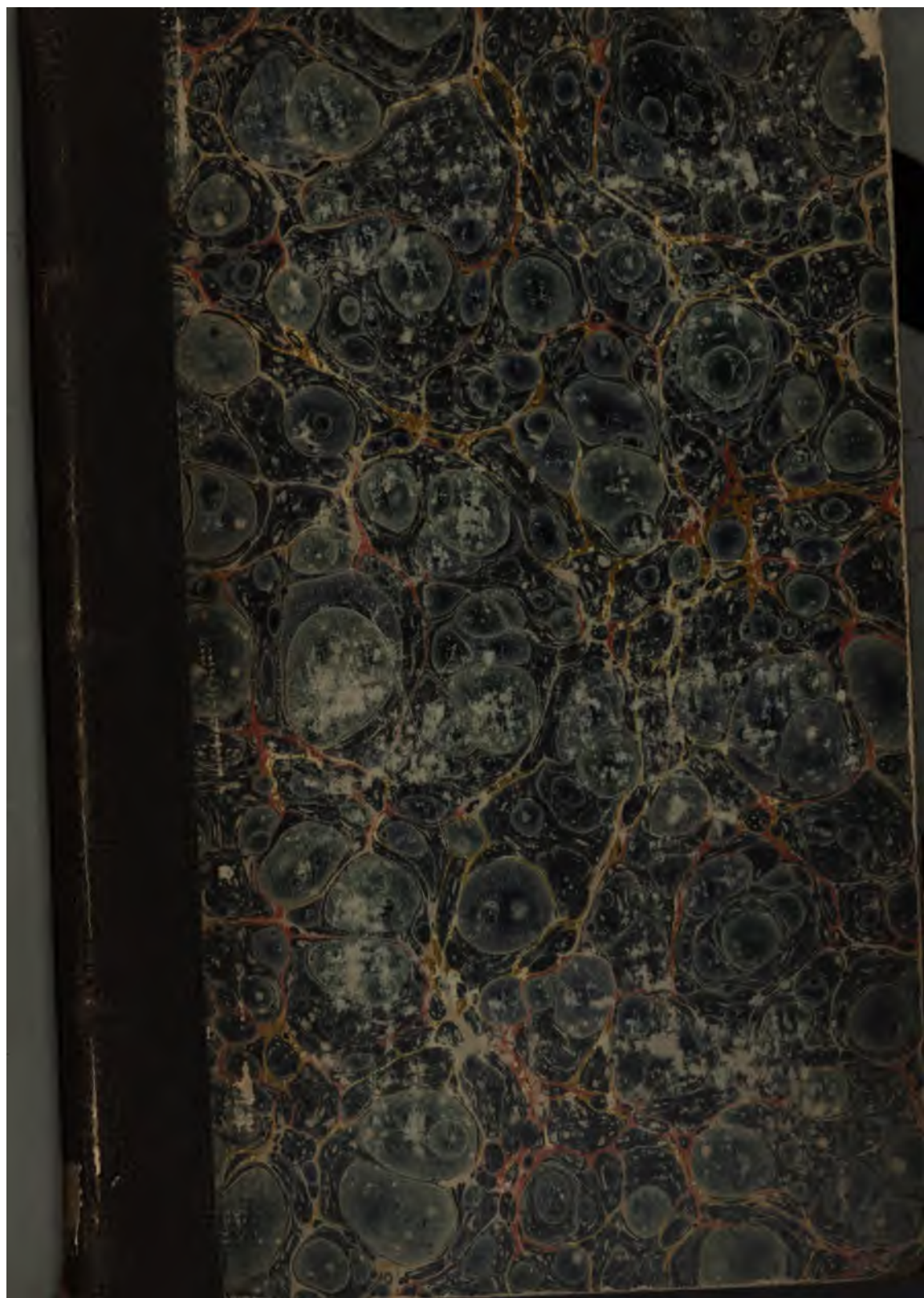
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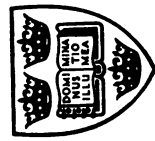
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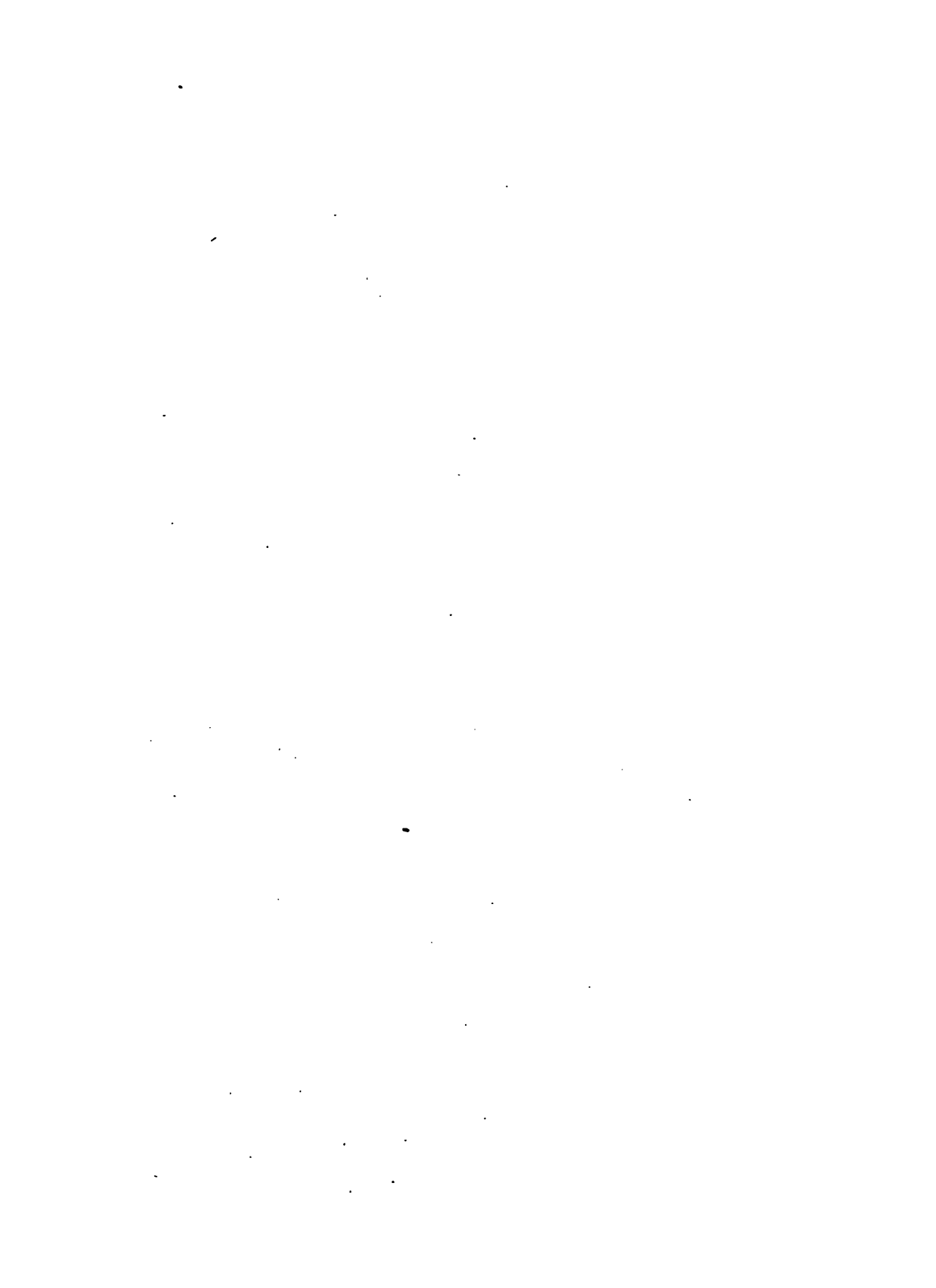




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A
TREATISE
ON
MEDICAL POLICE,
AND ON
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A
TREATISE
ON
MEDICAL POLICE,
AND ON
DIET, REGIMEN, &c.

IN WHICH THE PERMANENT AND REGULARLY RECURRING CAUSES OF DISEASE IN GENERAL, AND THOSE OF EDINBURGH AND LONDON IN PARTICULAR, ARE DESCRIBED; WITH A GENERAL PLAN OF MEDICAL POLICE TO OBVIATE THEM, AND A PARTICULAR ONE ADAPTED TO THE LOCAL CIRCUMSTANCES OF THESE CITIES.

IN TWO VOLUMES.

By JOHN ROBERTON, M. D.

AUTHOR OF THE PRACTICAL TREATISE ON THE POWERS OF
CANTHARIDES IN GLEET, LEUCORRHOEA, OBSTINATE SORES,
&c. &c. EXTRAORDINARY MEMBER OF THE
ROYAL MEDICAL SOCIETY, &c.

VOL. II.

"It would be deserting the cause of Humanity merely to deplore the lukewarmness with which the most useful truths are received, and the difficulty of overturning the established routine by which error is transmitted from age to age."
MORFEAU.

EDINBURGH:

PRINTED BY JOHN MOIR,
AND SOLD BY THOMAS BRYCE, & CO. EDINBURGH,
AND JOHN MURRAY, 32. FLEET STREET,
LONDON.

1809.

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BOOK I.

CONTINUED.

PART II.

OF GENERAL PLANS OF POLICE.

CHAP. I.

POLICE FOR NATURAL CAUSES.

SECT. I.—*Police for Soil.*

THERE is nothing new in asserting, that marshy situations, and collections of stagnant water, form sources of disease. Every person is aware of this fact, and every body talks about it; but it seems never to have been considered with a view to their removal, which is the only point of view in which it ought to be considered, if we expect that mankind are to be benefited by our exertions.

When we reflect that putrefying vegetable matter, for instance, is highly destructive of human life, a fact which has been acknowledged in every age, though the real nature of it seems not to have been understood; and when we reflect that all are nearly equally exposed to its baneful influence, we must perceive that the removal or suppression of such nuisances, equally interest every description of individuals.

In whatever form these putrefying masses may exist, even although they may be placed at a considerable distance from the habitations of man, they ought, by universal consent, to be entirely removed.

This subject has not escaped that very great observer of nature, Lord Bacon, who says, that "the inducing or accelerating putrefaction is a subject of very universal inquiry, and that it is of excellent use to inquire into the means of preventing or staying it, which makes a great part of physic and surgery."

The various modes of improving land in different parts of the world have greatly contributed to the removal and prevention of diseases evidently occasioned by a neglect of these matters. For instance, so far back as the days of Empedocles, that philosopher, by shutting up a great gulph of the

earth, opened in a valley between two mountains, freed all Sicily from a plague arising thence. Other instances may be adduced of the great benefit which has been derived from the improvements which have been made under similar circumstances. It is well known, that several of the West India islands are much more healthy than others, and this has been justly attributed, partly to the height of their grounds, but more particularly to the state of improvement in respect to clearing the ground of trees, shrubs, and marshes, by which the air has been rendered perfectly salutary.

To prevent the stagnation of noxious vapours in low grounds, in any country, it has been proposed, that trees ought never to be planted upon them, but upon the higher grounds, where grain cannot grow, and which are equally useful in rearing wood as those places which ought entirely to be set aside for the production of grain. A late author, Mr Williams, is of opinion, that the practice of planting trees in high situations would assist in attracting moisture, and thereby render the neighbouring country wet, and this thought certainly deserves consideration before such measures are adopted.

When putrid vapours have actually been collected, and when they are only collected within a circumscribed space, fires have been recommended, as occasioning currents of air which may carry off and disperse them; but I believe this is the utmost benefit that can be expected from the use of fires, as there is scarcely an instance, even when carried to combustion, where fires have had any effect in decomposing the putrid effluvia. Dr Mead denies that they possess any power in lessening the violence of the plague; but, in many instances, by giving additional heat to the already too much heated atmosphere, they have done harm.

There are certain situations where, from local circumstances, the soil cannot well undergo any change for the better. Various instances of this sort are well known, which, to answer the purposes intended, would require that the process of continually draining, &c. should be adopted in them, as their local situation renders this necessary.

When such rare occurrences happen, it is only necessary to avoid as much as possible breathing the effluvia arising from such soil.

It is remarkable, that both the rock and soil of Gibraltar are of a calcareous nature, and it is famed for its healthfulness. Easton, Nazareth, and Bethlehem, also, in the county of Northampton, America, are built of lime-stone, and these, particularly the latter, are very healthful. Febrile distempers very rarely occur in them.

Particular parts, therefore, of every country, deprived of this substance, ought to have it introduced into it. This has been adopted in America.

Calcareous materials in general have indeed been found of the greatest service, in various parts of the world, when used in building, paving, &c. in suppressing contagious distempers.

The city of Lisbon, for instance, is built of these materials, and though the most nasty, is the most healthy place in Europe. The chalky soil of Oxfordshire, also, particularly around its university, renders it remarkably healthful. A great deal of these materials exist in the Bermudas likewise, and that place is proverbial for its salubrity.

SECT. II.—*Police for Climate.*

THE grand object in rectifying the vitiated state of the atmosphere being first to prevent new accumulations of what we wish to destroy, our next object ought to be to decompose, and thus render perfectly inert, those effluvia which exist.

Ventilation, and whatever promotes ventilation, has perhaps very little, if any, effect in decomposing those effluvia; it probably does nothing more than remove the vitiated air from those places in which it is generated, and disperse it through the atmosphere.

The prevention therefore of such a state of the air is, in the consideration of this part of our subject, of the very utmost importance, and every probable means, however trifling, in which air may be vitiated, ought, by every individual, for his own personal safety, to be removed.

Decaying vegetables claim a very particular part of our attention, as from them, the smallest quantity being emitted, the air is at least as much vitiated as from any other decaying substance. From growing plants, therefore, even every yellow or ill looking leaf, &c. ought to be removed, if

possible, before the air has been injured by them. If these little particulars respecting the state of plants be attended to, there is perhaps no way by which we can so completely purify the atmosphere, and by inattention to them there is perhaps no way by which the atmosphere may be so completely vitiated.

When air is injured by respiration, putrefaction, or the burning of candles, it may unquestionably be restored to a greater degree of salubrity by the growth of sprigs of mint, and other plants in it. Although this does not at all times hold good, yet it in general may be depended on. Dr Priestley caused to be individually placed in vitiated air mint, spinach, lettuce, onions, brooklime, and some others. "In some instances," he says, "to my great surprise, air, which I had imagined from the appearance of the plants growing in it, must have been in a mending state, had not grown better at all, and had sometimes grown much worse." But it would appear, from the doctor's experiments, that where the plants failed to meliorate the air, they were either manifestly sickly, or at least did not grow and thrive. He observes, that "of the various plants on which I made experiments, I met with one which had the remarkable quality of ab-

sorbing a great proportion of any kind of air to which I exposed it. It is the *epilobium hirsutum* of Linnæus, in English the *willow plant*, and it grows best in the water of marshy ground." This is a valuable fact, as air, which from certain local circumstances, or other causes, cannot admit of the vitiating principle being completely removed, may be greatly amended by planting upon or in the neighbourhood of such places, a quantity of these trees proportioned to the quantity of vitiated air which may be produced.

Upon the whole, that part of any country in which we wish to choose a residence, ought as much as possible to be temperate, pure and dry, which has a very beneficial effect upon the respiratory organs, and strengthens and braces the fibres: cold and dry air is tolerable, but damp air is very dangerous; it particularly increases the disorders incident to men of letters, relaxes, obstructs perspiration, and produces catarrhs, rheumatisms, and palsies.

To remove from a cold temperature to one still colder, is not nearly so prejudicial as exchanging the air of a warm room for that of a moist and cold atmosphere. It is upon this principle that we are so apt to be affected by colds about the cool days of autumn after the heat of summer.

SECT. III.—*Police for Situation.*

We ought to make choice of a pure air, free from all pollution, and far remote from stinking places, for such air is most fit to preserve life, and to recreate the spirits; whereas, on the contrary, a cloudy or misty air, and such as is infected with gross and stinking vapours, dulls the spirits, destroys the appetite, and is the cause of many diseases.

In listening to the advice of the poet, on this occasion, we shall not only attend to our own comfort, but to our benefit.

“ And may no fogs from lakes or fenny plain,
Involve my hill ! And wheresoe’er you build,
Whether on sun-burnt Epsom, or the plains
Wash’d by the silent Lee ; in Chelsea low,
Or high Blackheath, with wintry winds assail’d,
Dry be your house ; but airy more than warm.”

The habitation of man ought to be far removed from shambles, flesh or fish markets, dyers, tallow-chandlers, cloth-dressers, furriers, skimmers, and from places where metals are cast and wrought. Filth and dung

of every description, muddy waters, and every thing of like bad odour, must be far removed from habitations. Houses situated near a river are the cleanest and most healthy. They generally have not, indeed they cannot well have, subterraneous dungeons, which have been destructive to thousands; and, by their nearness to running water, the stench of sewers, an evil almost as noxious, is prevented.

Men of letters, among the many other inconveniences that they suffer, are often obliged to fix themselves in towns for many reasons; they ought therefore to pick out as wholesome a lodging as possible; their rooms should be lofty, light, exposed to the wind in summer, and to the sun in winter; and, above all, they should avoid living near places which emit any sort of unwholesome exhalations. I mention literary men in particular, because they are, from the nature of their pursuits, deprived of many advantages which are common to almost every other class of people. At the same time, it may be observed, that such situations as are beneficial to men of letters, cannot be otherwise than useful to every other class in society.

If, from one or more circumstances, we have no great variety of choice in our situa-

tion, and are perhaps compelled to reside in the very worst places, such as near a foul foggy or swampy situation, we ought to avoid the lower apartments of houses, particularly if they be in any measure damp, and choose a house in which there are no doors or windows facing these places. Wood fires, also, kindled in the rooms morning and evening during the continuance of an easterly wind, will prove serviceable, especially if made of resinous wood, such as pine or fir.

Upon the whole, I infer, that the safest retreats, not only from the saltry heats, and the inundations of many countries, but from sickness attendant upon them, are to be found on the sides of hills or mountains; where there are no morasses within three miles; preferring such places also, where the vapour arising from the surrounding valleys cannot affect them, at least in a perpendicular ascent, and where the habitable parts of the houses themselves are not in any part under ground. Experience fully confirms this truth, that in situations where the soil is dry and gravelly, and clear from woods or stagnating water, people, even in the very hottest climates enjoy good health during all the seasons of the year.

In such countries, we above all recommend the moving into a more temperate and pleasant situation, where the heat of the day seldom exceeds 70 degrees of Fahrenheit's thermometer, and the cold of the night is not under 54 degrees of the same scale ; where the ground is altogether cleared of wood, and has no stagnating water above or near its surface ; where the soil is rich, fertile and favourable to the cultivation of European plants, and to the health of European animals ; and, lastly, where sheep brought from England still retain, without any inconvenience, their fleecy covering.

“ While yet you breathe, away the rural wilds
 Invite, the mountains call you, and the vales ;
 The woods, the streams, and each ambrosial
 breeze
 That fans the ever undulating sky.”

CHAP. II.

POLICE FOR ARTIFICIAL CAUSES.

SECT. I.—*Police for Construction of Houses.*

IT is universally acknowledged, that the air of a city is much inferior in purity, to the air in a free and open country. People of all descriptions, but especially such as are weak and emaciated, derive a considerable degree of exhilaration and improvement from a short excursion from town; and, if much confined to the house, exposure even to the city air is sensibly invigorating. But,

“ Ye who amid this feverish world would wear
 A body free of pain, of cares a mind;
 Fly the rank city, shun its turbid air;
 Breathe not the chaos of eternal smoke
 And volatile corruption, from the dead,
 The dying, sickening, and the living world
 Exhal’d to sully heaven’s transparent dome
 With dim mortality. It is not air
 That from a thousand lungs reeks back to thine,

Sated with exhalations rank and fell,
 The spoil of dunghills, and the putrid thaw
 Of nature, when from shape and texture she
 Relapses into fighting elements :
 It is not air, but floats a nauseous mass
 Of all obscene, corrupt, offensive things.
 Much moisture hurts ; but here a sordid bath,
 With oily rancour fraught, relaxes more
 The solid frame than simple moisture can."

It is only during the uninterrupted flow of health that we can enjoy comfort or pleasure of any description ; and as a great proportion of diseases are propagated by inattention to the construction of houses, laws and regulations for this purpose would contribute in no small degree to their prevention.

The first care, therefore, in building cities, is to make them airy and well perfumed ; because infectious distempers must necessarily be propagated amongst mankind living too close together. The air is also extremely tainted by having burial-places within the precincts of great cities. The passages, lanes, and streets of cities also should all be well paved or flagged, and carefully drained,

Mr Howard's observations on the construction and alteration of houses for the alleviation of human misery, did equal honour to his head and his heart. Although however, his indefatigable labours occasion-

ed many alterations for the relief of the unfortunate and the miserable, partly in consequence of the immediate want of such amendments, and partly by his pointing out the evident advantage which were experienced in the prisons on the continent, compared with what we could boast of in ours; yet his hints have not been so much attended to as their importance required. His observations indeed were principally concerning prisons; but what is beneficial to health in such situations, may be easily applied to the lower kinds of habitations in general.

Instead, however, of thus extending his plans, many of them have been entirely overlooked, even in the places to which he applied them. Acts of Parliament, unless attended to, might as well have never been passed, and I am sorry to say this observation may be too easily applied to our present subject. Mr Howard strongly recommends as an external advantage, that all prisons shall be furnished with a court; but in some instances, this is impracticable. In such plans, there is still an advantage, which may be productive of much benefit, and which, I believe is not used in any prison. What I allude to, is a walk on the top of the house sufficiently surrounded by high iron railings to prevent the escape of the prisoners.

Upon this they may be safely permitted to walk a certain number of hours every day. In such a place too, the bedding and clothing of every sort may be properly aired. Although these unfortunate people may be prisoners, their health ought most carefully to be preserved. In the construction of such a plan, however, it might be improper to make it of lead, which in summer would render the house too hot. Even when insuperable objections exist in some prisons, such a convenience as the above would obviate a number of them, by allowing the inhabitants the partial use of that air, which by their unfortunate situation they are otherwise denied.

The inhabitants of every building should be proportioned in number to the size and conveniences of the building itself; for when this is not observed, however favourable the construction of the houses may be, its tenants cannot be healthy. All ground floors of houses that have any signs of moisture should be rejected, and if they have been long uninhabited, strict attention should be paid to these and to every other circumstance by which the air within them may be vitiated before they are possessed. No clearer proof can exist of the comparatively salutary effects of the upper compared with the

under floors of such houses than every day present themselves to us. For it is in every country observed, that where dampness exists in a house, the under floor is always the most unhealthy ; and, if possible, to encrease these evils, the custom of papering the walls, and thereby harbouring the noxious effluvia, with the putrefying swarms of vermin which are generated and die under it, is the most effectual means.

But if dry habitations cannot be procured, the only resource against sickness from moisture, will be an encrease of fuel ; and, in addition to that, the floors may be covered with oil-cloths, which will intercept much of the rising vapour.

The use of stoves in dwelling houses ought universally to be prohibited. The air in such apartments becomes heavy and oppressive when deprived of that circulation, which is much assisted by the presence of an open fire, and which is completely prevented where there are stoves. Thus the heaviness uniformly felt where stoves are used, and which is commonly attributed only to the want of the presence of the fires, arises from causes of a more dangerous nature. It is in consequence of the air becoming vitiated, and emanations from some kinds of sheet-iron when heated, in-

creases the evil ; and, I have no doubt, are in many instances causes of disease of a very serious nature.

Dr Priestly's directions for the formation of dining-rooms seems very judicious, " I " would advise," says he, " that when large dining-rooms are built, provision be made for letting out the vitiated air at the top of them. For, breathing such contaminated air so long a time as it is now the custom to do at and after dinner, must be very hurtful. Otherwise, if it were not inconvenient on other accounts, it would be better to have the dinner in one room, and the desert in another."

With regard to hospitals, I may observe, that we erect them for the cure of diseases, in a great measure, because we have neglected their prevention. Indeed, I am convinced, that a vigilant exercise of all the means of preventing disease, by the entire removal of those sources of them, which every where appear, might, in a short period, supersede the use of hospitals, by extinguishing the diseases themselves. " This is a prospect," says Dr Currie, " in which the philanthropist might indulge with more safety, if he could calculate with equal confidence on the wisdom, as on the power of his species."

Since, however, this desired period has not yet arrived, our object must be to construct hospitals, or set apart houses already constructed, which may in every respect seem best calculated for the comfort and the recovery of the sick. In many instances, particularly in campaigns in different parts of the world, the great advantages derived from attention to those particulars in preventing the extension of disease, and thereby saving many thousands who would, under these circumstances, have died, are very numerous.

“ For this reason,” says Sir J. Pringle, “ not only barns, stables, granaries, and other out-houses, but above all, churches, make the best hospitals, from the beginning of June till October. Of this there was an instance in the campaign of 1747, when a large church at Maestrecht was applied to that use, and where, notwithstanding above an hundred lay in it with foul sores, fluxes, and other putrid diseases, for months together, (during the greatest part of which time the weather was very hot) there was no appearance of this fever (putrid.) Wherefore we may lay it down as a rule, that the more fresh the air we let into hospitals, the less danger there is of breeding this distemper.”

In addition to the particular construction of hospitals (rules applicable to which are likewise strictly proper to whatever houses sick persons may be confined in) it would be a good regulation, especially in such places as may be in any degree crowded, that all the patients who are capable of being any length of time out of bed, should remain through the day in large airy halls, and that their wards and bedding should, in the meantime, be as much as possible exposed to ventilation.

In hospitals, it has been recommended to employ flock, or, in preference to it, horse-hair for stuffing the beds, because it is supposed that these substances imbibe less of the contagious effluvia than wool, while they are less liable to become lumpy and uneasy. They are likewise preferable to straw, which Mr Howard has recommended, because, independently of the greatest care in making these beds, the pointed spicula of the straw will penetrate the cloth inclosing them, and prove very injurious to the tender skin of those patients who are afflicted with diseases of long duration. Straw beds have the appearance of less expence, but the frequency with which they require to be renewed, destroys this only advantage which at first recommends them.

After the numerous proofs that have been adduced by authors, that attention to cleanliness of the persons, and apartments of the sick, completely prevents the spreading of contagion, it may be unnecessary to adduce any individual instance; yet I cannot avoid mentioning as a very strong proof of this, the Royal Infirmary of this city, where epidemic diseases, however prevalent they may be, seldom; I may say never, affect any of the attendants, or the numerous students who daily visit that valuable institution. It may be urged, that habit may, in a great measure, prevent their being infected, but this supposition must fall, when it is recollected that our infirmary is built in a fully inhabited part of the city surrounded in some parts, within thirty feet of the windows of the fever wards, by the dwelling houses of the inhabitants, who are never known to be affected by similar diseases. The inhabitants are so fully convinced of the safety of being ated even so near these fever wards, that a piece of ground immediately contiguous to them, although it furnishes sites for five houses only, was lately sold for nearly the immense sum of 10,000l., has been built upon, and the inhabitants of it are quite ex-

empted for these sort of complaints which exist in the hospital.

Thus, by proper regulations, many diseases may be prevented, and consequently the comforts of life augmented without any material increase of expenditure. The difference between disease and health must have been felt by the majority of us. When, during the day, the little strength we possessed has been nearly exhausted; and when, the night arriving, we are unable to procure a moment's refreshing sleep, we at such times anxiously compare our state with that of those who are in the vigour of health, by whom the tediousness of sleepless hours is never felt. Then,

“ — When the growling winds contend, and all
The sounding forest fluctuates in the storm ;
To sink in warm repose, and hear the din
Howl o'er the steady battlements, delights
Above the luxury of vulgar sleep.”

SECT.—II. *Police for Occupations.*

I have no hesitation in stating, that all occupations carried on under ground, or

wherever the free circulation of atmospheric air is either not made or greatly vitiated, are highly injurious to health ; and where from their nature this happens, or where the admission of air is impossible, as in some mines, coal-pits, &c. the introduction of it by artificial means, ought never to be omitted. This being too often neglected, many lives, highly valuable to their country, are either suddenly sacrificed, or have entailed upon them a train of lingering diseases, which terminate only with their existence.

The same may be observed respecting *all* manufactories where great quantities of animal substance are used in a putrid state ; as among tallow-chandlers, glue-makers, &c. These, though in most instances little injurious to the people constantly employed in them, must be exceedingly hurtful to others, who are only occasionally exposed to their influence.

Shambles, flesh-markets, &c. and all places where vegetables are collected, ought to be kept very clean. In that state, they probably do little or no harm ; but when suffered, which is too often the case, to be strewed with putrid materials, the very worst consequences must continually result from such sources of contamination. I have elsewhere observed, that in the immediate

neighbourhood of such places when any epidemic has either been generated there or imported to them, it always rages with much greater virulence than where such contamination is unknown. Unquestionably, on such occasions, the contagious virus acquiring additional force, extends its devastations to much greater extent than if no such circumstances had aided its propagation and extension.

SECT. III.—*Police for Modes of Living.*

“What suits the climate best, what suits the man,
Nature profuses most, and most the taste
Demands.”

Import-
ance of
this Sub-
ject.

It is absolutely necessary that physicians should study more than they do, the nature of the various kinds of aliment on the human body; without which, they must remain ignorant of many of the principal causes of disease, and consequently of the proper means of obviating or of removing them.

Influence
which it
has already
had.

As to diet, it may be observed, that hopped beer, wine and vinous liquors, coming more into general use, have been some means

of suppressing putrid diseases. While greens and fruits also are more universally eaten, salted meats make a much less part of diet than formerly. To this is added the more general consumption of tea and sugar, which are possessed of no inconsiderable antiseptic qualities. These things, doubtless, may be much abused, and thus be productive of effects of a very different nature. To this antiseptic quality of sugar, which for above a hundred years past, has been daily joined, in large quantities to other ascendent food, we may perhaps ascribe some share of the general decline of putrid diseases; for, now, we seldom hear of leprosies, putrid scurvies, dysenteries, plagues, pestilential fevers and similar distempers, formerly so frequent; and to which those were peculiarly subject who used animal food in excess, especially salted meats.

General rules for living, are perhaps the most difficult part of the duty of the physician; and although this fact is very evident, I am sorry it has so seldom been considered in the important point of view to which it is so justly entitled. Were more attention paid to this subject, many diseases which we every day and in every country meet with, and which we vainly, and often perniciously attempt to drive away by the

Effects
likely to
result from
it.

mere force of drugs, would, by attention to this and one or two other similarly simple rules, be more effectually and more beneficially removed (at least for the patient) than ever can be expected to happen, when such monstrous loads of medicines are administered.

Were proper regulations adopted, which would have for their basis the principles of common reason and common sense, I think much of this destructive custom might be prevented. The task may be difficult; but it ought not, on that account, to be almost entirely laid aside.

General
Rules on
this Sub-
ject.

General rules in living may, under certain restrictions, be attended with benefit. In winter, to resist the cold, the aliment ought to be dry and warming. In spring, when the weather grows mild, the diet should be accommodated to the season, and somewhat cooler and lighter. In summer, when the season becomes hot and dry, the food should be cooling, and the drink diluting. But after the autumnal equinox, the aliment should again be of a warming nature, and your clothes thicker, by degrees as you approach the winter. In summer :

“ ————— Let the cool,
The moist relaxing vegetable store

Prevail in each repast.

Yet when pale seasons rise, or winter rolls
His horrors o'er the world, thou mayst indulge
In feasts more genial, and impatient broach
The mellow cask."

Still it must be recollected that there exists a wide difference between indulgence in living, and irregularity. An observance of this, during every season, is absolutely necessary to the preservation of human health.

If due attention were paid to regularity in living, under which I include those substances used in the form of meat and drink, I am convinced that the greater proportion of the diseases which we every day see around us, would never have existed. Then

"—Frugal be your cups : the languid frame,
Vapid and sunk from yesterday's debauch,
Shrinks from the cold embrace of wat'ry heavens."

I admit that such instances may be long persevered in, without apparently producing any bad effect ; but they nevertheless secretly undermine the constitution, and, when age approaches, it comes with double horrors in its train. It therefore ought to be recollected, that every extreme is an enemy to nature. I confess, that after these habits

have been indulged in, it is difficult to alter them, and to fly from one extreme to another is highly dangerous. Even those things which are in themselves bad, as dram drinking, chewing tobacco, sitting up late at night, sleeping immediately after dinner, morning *whets*, as they are called, &c., should be relinquished by degrees :

“ ———— ’Tis fit that man,
To change obnoxious, be to change inur’d.
But stay the curious appetite, and taste
With caution fruits you never tried before.
For want of use the kindest aliment
Sometimes offends; while custom tames the rage
Of poison to mild amity with life.”

Every person who attends to his own constitution, and the effect of different kinds of aliment, will be able to form better rules for himself in this respect, than are to be expected from a physician. If these little particulars are attended to, and even the common feelings of our nature are not grossly abused, the necessity of having recourse to drugs, for the most part only necessary when such conduct is indulged in, will be very rare. These are benefits which we can confer on ourselves, and we have ourselves to blame, if we abuse them.

With regard to diet, I may observe, that *he* may be convinced that he has committed no excess, who immediately after dinner can write or walk, or go about any other necessary business with pleasure ; and if, after supper, his sleep be not disturbed, or shortened by what he has eat or drank ; if he has no headach next morning, nor any uncommon haughing or spitting, nor a bad taste in his mouth ; but rises at his usual hour refreshed and chearful.

If base custom has not in any of these respects injured us ; if we have not indulged so far in luxury or debauchery, that refraining from such practices would be more destructive of life, than even the indulgence in them, let us

“ ————— By the sacred tears
Of widows, orphans, mothers, sisters, sires,
Forbear ! No other pestilence has driven
Such myriads o’er the irremeable deep.”

By attending also to the proper regulation of diet, exercise, cloathing, &c. of children, we contribute greatly to prevent many infantile diseases, whose terminations are fatal ; while, at the same time, we assist by these means in the regulation of the passions, bodily form, beauty, &c.

Of Flesh
in General.

The flesh of quadrupeds, as it contains a great proportion of oily matter, is a highly nutritious aliment, provided only we use no more than the digestive organs can properly assimilate.

The flesh of the male is always more dense than that of the female; and the density of every animal always increases as the animal advances in life, so that young meat is universally more soluble than old. The flesh of young animals, therefore, is more easily digested than the flesh of old ones; and that of carnivorous animals is more difficult of digestion, and less nutritious, than the flesh of the graminivorous tribe, which is firmer, contains less fluid, and hence affords more nourishment. It may be added, that the flesh of *tame* animals is more nourishing than that of *game*.

The flesh of animals is most nourishing when they are much exposed to the open air, and are kept in dry, warm places. On the contrary, the flesh of grown cattle which have been confined in bad air, and which have led an inactive life, is far from being wholesome food.

Well fed animals, also, though not the masses of fat in them, are easier of digestion than lean animals, whose fibres are closely compacted together. All kinds of *fut* and

marrow agree best, with persons of strong digestive organs, and who undergo much bodily exercise. Otherwise, they produce diarrhæa, head-ach, heart-burn, &c. Lean food is, on the other hand, in general more easily digested than fat, on which account, we ought more particularly to use to the fat a greater proportion of salt, which renders it more easily digestible.

The blood of animals is completely insoluble in our stomachs, and consequently in no degree nourishing.

A continuance in the use of animal food without vegetables, is not conducive to health, and it likewise gives the breath an offensive smell. Perhaps as a general rule, three-fourths of vegetables, with one-fourth of animal food, is the most proper proportion that can be used. Much, however, depends on the particular properties of these substances.

Much animal food is improper for those of a full plethoric habit of body. Vegetable food ought to constitute with them a great part of their diet. But in the phlegmatic and weakly, provided the stomach is still capable of proper digestion, animal food is perhaps the most proper.

Living on animal food for a great length of time has a great effect on the milk of

every species of animals who give suck. It is rendered of an unpleasant and disgusting taste. Nurses of children ought to attend to this fact.

I believe it is hardly ever necessary to give children under the age of puberty any quantity of animal food ; and we have innumerable instances in this country of children reared to the most perfect health and strength without the use of it, except the small quantity of it that is given by an egg, and this very sparingly and seldom bestowed. On the contrary, animal food among children has often very hurtful effects.

The density of beef is always greater than that of mutton ; indeed in the ox, it is denser than in any other quadruped. On account of the extreme density of bull-flesh it is seldom chosen as part of our diet : In the female, however, if well fed, and within three years of age, it is more soluble and sufficiently fit for nourishment ; but in the ox the fat is better mixed, the flesh more sapid, and, unless old, is in general to be preferred.

Beef.

The flesh of a good bullock is equal, if not superior to any other ; and its fat is as easily digested as that of veal. The tongue and the tripe are the most indigestible parts of this animal. I here allude to bullocks kept much in the open air ; for those kept

in stalls, and for the most part confined, are, as well as cows, (which indeed are worse than bullock's) scarcely at all digestible.

Veal is the young ox, it is very soluble, gives a more gelatinous extract than the flesh of the adult; but is not more nutritious. Under two months, it is of a soft texture; but after that the muscular fibre becoming more distinguishable, the flesh acquires a greater degree of toughness. Veal, then, is a food of easy digestion; but not so nutritious as the same animal in a state of maturity. It ought not to be brought to market before it is at least six weeks old, and fed, if possible by its mother's milk. Its fat is lighter than any other. Veal ought never to be boiled, as the juices are too easily separated from it, and what remains is very difficult of digestion.

Veal.

Mutton reared in dry pastures is preferable to that reared in moist places. The flesh of rams is tough and unpleasant; but that of ewes and wethers is of a rich viscous nature. The best mutton is that of sheep not less than three and not above six years old. Under three years, although it is juicy, it is tough, and has not attained its perfection and flavour.

Mutton.

The *lamb* is generally best when two or three months old, but in the early part of

Lamb.

the year, it is often killed when not more than as many weeks. If good, its fat is easily digestible. The flesh of all animals, such as house lamb, reared within doors, being unnatural, their flesh is insipid, and can only be valued because it is unseasonable.

Pork.

Under similar circumstances, beef or mutton is certainly more capable of affording nourishment than pork ; partly from the latter living in close sties, without being allowed to take exercise, which renders their flesh strong and indigestible. This may be removed by altering the mode of training these animals, which would probably render their flesh, particularly when young, easily digestible. In the *sow*, the young has much less oily matter about it than the old, and is much easier digested by many who are unable to assimilate the old. What is known by the name of *brawn* consists of pork with the oil well squeezed out. It is not readily soluble ; but to those stomachs that can dissolve it, it affords a great deal of nourishment. The flesh of *wild hogs*, on account of their exposure to air and exercise, is more palatable, more easily digested, less tough and not so fat as the others.

There are three species of *venison* employed in the food of this country; the stag, the fallow deer, and the roe. Though wild, much exercised, and of a dense substance; they, when tolerably fat and of a proper age, are sufficiently soluble and nourishing. The fallow deer are, in general, better fattened than the other two, and afford a more soluble meat. Venison.

The flesh of the *hare* is dense, and not easily soluble; when hunted much, it is more difficult of solution than when killed suddenly, when it is tolerably nourishing. Hare.

The flesh of the *rabbit* is of a very different quality, partly from their want of exercise. The young in particular, are tender, readily digestible and considerably nourishing. Rabbit.

Deer, like every wild animal in constant motion, are drier in the flesh than tame animals. When properly roasted or stewed, however, they form mellow food, and are readily assimilated to our fluids. Those parts of wild animals which have least motion, for instance, the back of them, are are most juicy and palatable. Deer.

Birds. The flesh, or those parts of *birds* which we employ as aliments, are nearly of the same qualities as those of quadrupeds. The flesh of birds, however, is less nourishing than that of quadrupeds, though in general easier digested. Birds living on grain and berries are more wholesome food than those which subsist in swampy and filthy places, and live on worms, insects, and fish.

Cock and Hen. The *cock* and the *hen*, are among the least stimulant of animal food. Although the young of these animals, the *chicken*, is, as in the instance of veal, more soluble than the old, yet, in some instances, it is not more easily digested, but the contrary. Before a year old, the difference arising from the sex of birds is not very remarkable; but after that period it becomes more and more considerable. Castration has a great effect in rendering these animals more rapidly fat, and in enabling them to retain their tenderness longer. Young hens or capon are more delicate dishes when not stuffed by indigestible materials before preparing for the table; and barn door fowls are certainly unexceptionable food; but it would appear that the crammed fowl is equally good and more ~~sapid~~ and tender.

There are many different species of the cock and hen; but they do not seem to be different in respect to their qualities as aliment.

The *turkey* seems to be nearly allied in its properties with the cock and hen. Turkey.

The *pheasant* possesses little solubility, perhaps less than any of the domestic fowls; except that in the very young state it is not readily digestible. Pheasant.

Of *partridge*, there is a great variety; but as aliments, they do not seem to differ in any considerable degree. It is more tender than the pheasant. Partridge.

The *woodcock* and *snipe*, from their exercise in flying, have the muscles of their breast rendered firm and less soluble than the legs, which are little exercised. Woodcock and Snipe.

The flesh of the *swan* is dense and of very difficult solution, and therefore seldom used as food. The tame *goose* approaches to that of the swan, but from its living on much vegetable aliment, is more tender, and much easier of digestion. Swan and Goose.

Most of the *sea birds* who live upon fish are tender, sapid and of easy digestion. They are commonly, however, of a strong odour, and rank fishy taste, which to many render them highly disagreeable. Sea Birds.

Amphibia. Among the *amphibious animals* most commonly used as aliment, are the sea-tortoise and the frog. The flesh of the first is white, very much resembling that of young quadrupeds, and the nourishing principle of both is nearly alike. Frogs are not much used in this country, but they are nearly possessed of the same qualities as the turtle, though perhaps scarcely so nutritious.

Fish. I believe it is pretty generally acknowledged, that salt water fish are preferable to those of fresh water. Among fishes, however, used as aliment, there seems no very marked difference between the more distinguishing qualities of those of fresh water lakes, rivers, and the sea. Although there is considerable difference in the firmness of the substance of different fishes, it is never so considerable as that of other animals. Age seems to have little effect in rendering their texture firmer than in early life. In some persons, during their digestion, they produce a feverish state of the system, with an efflorescence upon the skin. Those of firm dry texture are less nourishing than those of the gelatinous

kinds. While the oily kinds are less easily digested, they are, however, more nourishing than the other.

Eels and *carp* are much more fit for use when they are old than when young. On the contrary, *haddocks* increase in hardness with their age, and therefore ought to be used when they are young.

Those aliments taken from the class of Shell Fish. mollusca, the chief of which is *oysters*, are in their fresh and raw state of easy digestion; but when boiled or roasted, are much more difficult. They seem to be considerably nourishing.

The *mussel* and *cockle* being of firmer substance than the oyster, are more difficult of digestion.

The *sea snail*, *cochlea* or *whelk*, is of tender substance; easily digested, and from its gelatinous state is supposed to be very nourishing.

The *lobster*, the *crab*, the *prawn* and the *shrimp*, are almost the only crustacea of which, in this country, we use as aliments.

The lobster and crab seem to differ more in their appearance than in their quality. In their nature they are somewhat similar to most part of fishes. Being without oil, they afford little nourishment, and are more

difficult of digestion than most part of lean fishes.

gs. *Eggs* contain a large proportion of nutritious matter, but do not seem of a very stimulant nature. Eggs of different animals seem very little different in their properties from each other ; and even those animals whose flesh is of the rankest taste and smell, give eggs entirely free from either.

lk. The best *milk* is obtained from the cow at three or four years old, and about three months after producing the calf. It ought to be white, and without any smell. Ewes milk is rich and nourishing ; both it and goats milk produce much cheese, which is tough, strong, pungent, and difficult to be digested. No acid substances ought to be eat along with milk, as a coagulum would be formed.

Different kinds of milk seem to have properties in common with each other. They

spontaneously separate into *cream*, *curd* and *whey*. Cream is of an oily unctuous nature, still containing a certain quantity of both the coagulable and watery parts of milk. When agitated by churning, butter is separated from it. Butter not well freed from butter-milk, more readily becomes rancid, than that which is more entirely freed from it; is preserved longer free from rancidity by being kept for a short time melted, and, with the application of sea salt, with a little nitre and sugar, butter may be preserved a very long time.

When the cream has been removed from the milk, a *coagulum*, or *curd*, is formed, the watery particles separate, and both acquire some degree of acidity. They may, however, be separated, and when a substance called *runnet* is added to the coagulum, it becomes firmer, and thus the matter of cheese is formed. Runnet is formed by filling the fourth stomach of a calf with milk, which is there coagulated; and the stomach, with the coagulum included, is preserved for use in salt water.

The watery part of milk or *whey* is at least seven-eighths of the whole milk. It is capable of vinous fermentation, and consequently of affording by distillation an ardent spirit.

Milk is probably more readily formed into proper chyle than any other aliment, and is highly nourishing, and easily digested, even by the weakest stomach. We find that infants, whose digestive powers are weak, are best supported by this fluid. It is most nutritious as soon after it comes from the cow as possible; for by boiling, &c. many of its nutritious particles fly off. Milk is much better in summer than in winter, and is best when the animal is exposed much in the open air.

Milk of itself is uniformly wholesome food for children, and never produces bad effects, except when eat along with cakes, pastry, ginger-bread, and such trash. In most countries, milk as diet is preferable in early life, but as this advances, particularly in cold climates, and where men are engaged in the laborious business of life, a certain proportion of animal food is highly proper, and even necessary.

If the stomach be not relaxed, or very much injured by *tippling*, a bason of cow's milk, with a piece of stale or thin toasted bread is an excellent breakfast in spring and summer. Certainly much better than tea, coffee, or the like warm liquors, and hot indigestible rolls.

It is difficult to give general rules for living; for we will find, that even milk disagrees with many; such as the plethoric and corpulent; but particularly with *tipplers* and habitual dram-drinkers; it oppresses their stomach, and prevents digestion.

Butter is exceedingly nourishing, but ought to be used sparingly by sedentary people. The good quality of butter may be known by its fat shining surface, yellow colour, agreeable flavour, and sweet taste.

Butter.

Cheese is the most glutinous part of the milk freed of its whey, and closely compressed. It is an indigestible food, and it seems a doubtful point, if even, according to custom, in small quantity, assists digestion. When toasted it is still less digestible.

Cheese.

The seeds of plants are the chief part of our vegetable aliment in almost every part of the world. They contain much farinaceous matter, which, containing a great proportion of saccharine matter, renders it of all vegetable products, the most nourishing to men, as well as to domestic animals.

Farina
and Bread.

Farinaceous substances are very widely distributed over the earth, and when made into bread, are used alongst with almost every morsel of other foods, as if instinctively. The Laplanders, in want of the vegetable farinacea, powder fish bones, and employ it in bread.

Wheat flour is the most generally used farinaceous substance, almost all over Europe. For use, in the form of bread, it is moistened with water, allowed to undergo a certain degree of acescent fermentation, which may be accelerated by yeast or lees of ale; it is then dried or baked in an oven, by which it is swelled into a larger bulk, becomes spongy, and is readily miscible with the saliva, and with our other food. Wheat is the only farinaceous substance, that affords a perfect bread by fermentation, whether spontaneous, or by the assistance of yeast, &c.; but it does not, even independently of the gelatinous matter it contains, seem more nourishing than the other farinacea.

Oat-meal is especially used among the lower classes of the people in Scotland. It is sufficiently nourishing, notwithstanding of its being used in an unfermented state, as is proved by appearance of those people who use it most. In some, indeed, it produces

heart-burn, which is owing to its being unfermented; wheat meal in the same state, would produce the same effect.

Porridge, made of this meal, is not so heavy as that of wheat-flour, but both require most healthy organs for their digestion.

Barley contains a much smaller proportion of oil than some other grains, and upon that account is less nourishing than those of others. Being more subject to vinous fermentation than most seeds, it is the grain from which very universally our beers and ales are prepared.

After decoction, the grosser parts of the barley ought not to be eaten, as they possess no nutritive principle.

Oats and *pease* are more nourishing than barley, and therefore, in countries where much barley is used, it is found necessary to mix with it a quantity of oats or peas. Beans, peas, lentils and the like, afford a rich and strong nutriment, but they best agree with a vigorous stomach. To many people, this food produces heart-burn, flatulence, and costiveness, particularly if eaten frequently and copiously; they are therefore improper for daily use.

Green peas, &c. are more easy of digestion; indeed all vegetables of this kind, as

they advance in growth, become more oppressive to the stomach.

Rye-bread, though less nourishing, is more easily digested than bread made of wheat.

Sago is the medulary part of a species of palm-tree, reared in several East India islands. The natives macerate it, and form it into cakes. As presented to us, it ought to be cleaned of dust, mould and sea-water. To make a complete decoction of sago, the first decoction ought to be strained, and then boiled a second time for about half an hour. This farinaceous matter comes to us in a granulated form. When boiled, it is resolved into an insipid and almost transparent jelly. From the quantity of gelatinous matter it contains, it affords a considerable degree of nourishment, and is often used for weakly persons.

New baked bread is much more indigestible than after it has been kept two or three days. If this cannot be done, it ought to be toasted. Those troubled with flatulency, cramp of the stomach and indigestion, should not, on any account, eat new bread. Indeed *all* pastry is unwholesome, particularly when hot; and the most wholesome

bread is that which is most spongy or porous.

The *potatœ* is almost to every person a Roots. wholesome and agreeable food, is easily digested, and can be hurtful only when immoderately used. Being a dry vegetable, it requires a proper quantity of moist food along with it, or drink to render it more easy of digestion. Its excellent nourishment is sufficiently obvious in the healthiness of those country people, particularly in Ireland, whose principal food is of potatoes. Animals, too, are easily fattened on them. Those of the farinaceous kind are much easier digested than the heavy and gelatinous kind.

Arrow root, affords a larger proportion of nutritive mucilage than any vegetable hitherto discovered, and ought to be used in broths, &c.

Beet root contains a large proportion of saccharine matter. It possesses mild aperient qualities, is economical for culinary purposes, and ought to be used for supper by those who are of a costive habit. It, however, possesses flatulent qualities, and therefore ought to be used with parsley, celery, or even potatoes.

Carrots are very flatulent, and therefore improper food for the weak.

Parsnips possess an aromatic principle, and are less flatulent than carrots.

Turnips, when boiled, are easily digested, and occasion little flatulence. They have some sweetness ; but do not seem to contain much nourishment in proportion to their bulk. They are yellow and white. The yellow, while it is easiest preserved during the winter, and therefore of more extensive use, is more sweet and seemingly more nutritious than the white. They are not easy of digestion, if kept long in cellars. The long Swedish turnip is to be preferred.

Radishes, when old, are extremely indigestible ; when small, however, they are less so. They assist in increasing the appetite, and therefore, ought to be used a little before rather than after dinner.

Onions, leeks, garlic, eschalot and chives, are stimulant, and assist digestion. They are most useful in cold phlegmatic habits ; but from the disagreeable penetrating smell which they impart to the breath, they cannot be generally or constantly used.

Celery is the most fragrant root we possess in our climate. It is digested with some difficulty, which may be removed by boiling it in water, or soaking it, for a short time in vinegar.

Fruits are more or less nourishing in proportion to the quantity of sugar they contain. Fruits.

Figs, a very saccharine fruit, united with a large proportion of mucilaginous matter, were anciently the chief food of the athletes or public wrestlers. *Dates* possess qualities somewhat similar.

Apples and *Pears*, except the very hard, or the winter kind, are agreeable and possess a pleasant but mild acid. When apples are stewed, in particular, they are easily digested and wholesome.

Grapes contain a large proportion of sugar, and are, if used without their husks, the safest and most nutritive of summer fruits.

Plumbs, *cherries*, *tamarinds*, *peaches*, *apricots*, &c. are, when used ripe, very agreeable, possessing a pleasant, mild and grateful acid. They must be carefully avoided when unripe, and their stones, when swallowed, are often attended with the worst consequences, by lodging in the intestines and producing the most fatal symptoms. These have commonly a larger proportion of acid with respect to their sugar than some other fruits; and therefore, with the exception of the last, in a great measure, produce acidity, and diarrhoea.

Gooseberries are very wholesome food, provided the skins are not swallowed with them.

Strawberries are also very wholesome, producing laxative effects without being debilitating.

The *pine-apple* is the most exquisite of all fruits; but is so luscious, that it can only be used in small quantity. It is moderately nutritious.

The *melon* is far inferior in flavour, much more watery, and less nutritious.

Oranges, lemons, and other fruits of that kind, are salubrious and cooling in their effects, and from the latter of them we obtain the strongest vegetable acid.

The juice of lemons has been found to correct the constipating effects of opium. On which account it has been recommended to those who are in the habit of using large quantities of that medicine. It has been thought that it was owing to the large quantity of vegetable acids used by the Turks that opium produced no injurious effects on them.

Cucumbers are a cooling fruit, and are most proper when eaten with vinegar and pepper. With the addition of oil, however, they are insupportable to most weak stomachs. They make an excellent pickle, particularly when very young.

Almonds, wa'nuts, hazle-nuts, and *nuts,* are extremely difficult of digestion, and

ought not to be used by those of weak digestive organs.

Fruits come to maturity when they are most useful; that is, during the harvest months, when, by the decayed vegetables, complaints exist which are in general much benefited by the moderate use of them, either in a raw or boiled state. A little old wine to promote their digestion is proper; but the immense quantity of ardent spirits used for this purpose, particularly in the northern parts of our country, is very hurtful.

Acids are universally acknowledged to resist putrefaction, and hence arose the instinct of man, leading him to the use of these fruits in warm climates, in warm seasons, and in every other circumstance that is known to encrease a tendency to putrefaction. The eating, however, of unripe fruits of any kind, is always hazardous, and sometimes hurtful.

Dried fruits are certainly safer than recent, before meals. In most stomachs, fruit in moderate quantity is safe after meals; and where much animal food has been used, it is generally proper.

Milk and fruit may be taken together with the greatest safety, experience convinces us of this by every day's habit; there-

fore, strawberries with cream, or butter with apple pye, make a very proper diet. Fruits preserved in ardent spirits, lose their original qualities, their acescency is entirely destroyed, and they lose even their nutritive qualities.

Vegetables Vegetables imbued with any strong odour or taste, are in general rejected from the list of aliments, the acid and sweet being preferred.

Cauliflower and *broccoli* are tender; easily digested, and produce little or no flatulence.

The young shoots of *asparagus*, when boiled in water, are tender, somewhat sweet and mucilaginous, and may therefore be presumed to be considerably nourishing.

Artichokes are light and tender, and still more nutritive, but less diuretic than *asparagus*. They are very useful for culinary purposes.

Herbs, such as cabbage, spinnage, and the like, afford little nourishment. They are cooling, and may be freely used in summer. When boiled, they are of a laxative nature.

Cabbages are white and red, the last of, which is very indigestible; they all afford nourishment; but in some produce flatulence in the bowels; the latter is the sweeter and tenderer kind.

White Cabbage is possessed of much less flatulent qualities than the common greens, and is somewhat laxative and diuretic. This vegetable sliced in thin shreds, and afterward seasoned and salted, is the *sauer kraut* of the Germans. This preparation is easily digested; and is extremely useful at sea, as it can be kept a very great length of time. Captain Cook experienced the happiest effects from the use of this substance in preventing epidemic distempers, particularly dysentery, fevers, &c. Vegetables, apt to produce flatulence, may have this quality removed by thoroughly boiling them, or making them into this *sauer kraut* before using them.

Spinage affords but little nourishment, as it passes quickly through the stomach and bowels almost undigested. In debilitated habits, when it is dressed with butter, it is apt to produce looseness, heart-burn, &c.

Parsley is of a stimulating nature.

Sorrel, possessing one of the strongest vegetable acids, has a power of destroying the enamel of the teeth, and ought not, therefore, to be of general use.

Water.

The aliment of man is taken entirely from other animals, or from vegetables, and no part of it, excepting water, is taken from the fossil kingdom.

Water, without any addition, is certainly the proper drink of mankind. When impregnated, it usually acquires some peculiarity of taste or smell ; this, however, does not always happen, as in the waters distinguished as *hard* and *soft*. The former is improper for certain purposes of domestic economy, though not peculiarly hurtful. The softer waters, when in our choice, are always to be preferred. On the other hand, the softest and purest of all waters, such as that from rain and snow, possess no peculiar advantages.

The spring and well water of sandy or pebbly grounds, is more pure and healthy than any other. River, rain, snow and lake water, are more apt to be loaded by a variety of putrifying substances, which render them in general very unfit for culinary purposes. Filtering these waters through a quantity of sand or small pebbles, assists very much in purifying them. And if water be corrupted, half an ounce of alum will, without imparting astringency to it, make twelve gallons of it pure and transparent in two hours. By the addition of a small quantity

of quick lime, water may be preserved from corruption in long voyages ; or a small quantity of alkali and vitriolic acid to every cask, or the casks being charred within, will answer the same purpose.

Coffee is a pleasant beverage, and, when used in moderation, promotes all the healthy functions of the stomach. When too much roasted, it is rendered insipid ; but when not sufficiently roasted, the coffee acquires a bitter and an unpleasant flavour.

Coffee,
Tea, &c.

To prepare coffee, the best proportion is one ounce of well roasted coffee to one pound or pint of water, which, if just allowed to boil up, has most of flavour ; but if boiled for some hours, becomes better blended with the water, and is preferred by many.

The coffee of the Levant far excels that imported from the West Indies, which is frequently steeped in sea-water, to make it weigh heavier. We can detect this by soaking the raw coffee in water, and examining the taste of the liquor. If coffee be drunk immediately after dinner with a view to promote digestion, it requires no milk to dilute and render it weaker ; but, at break-

fast, it requires milk to sheath the empyreumatic oil it contains.

All kinds of mock coffee, made of rye, wheat, pease, dried carrots, beet, the tucory root, &c. have little resemblance to it, except what they acquire by their burnt taste and empyreumatic oil.

Chocolate boiled with water, milk, and eggs, is exceedingly nourishing; but with spices, it is heating and less wholesome.

Tea is an agreeable beverage; and, when taken in moderation, is refreshing and exhilarating.



Beer.

Fermented liquors are of two kinds; *wines*, when prepared from the juices of fruits; *ales*, when extracted by water from certain seeds and roots.

Sugar, or substances containing it, are the subjects capable of being changed by fermentation. The sugar is in part converted into alcohol, and the juice of the fruits, in consequence of fermentation mixing with it, constitutes wine; and it is this which, differently modified with the addition of

other matters, gives wine all its different forms and qualities.

Beer, made of a great proportion of hops, and a small quantity of malt, gives tone to the stomach, is a good beverage, and well calculated to allay thirst.

Plethoric persons agree best with light beer, but wet-nurses and the debilitated require the thick nourishing beer, which is more strengthening. It is only the weak, the lean and the laborious, provided they are not troubled with flatulence, who should make habitual use of beer or porter. Those also who take a great proportion of vegetable food, and have a weakly stomach, will find a strong and bitter beer salutary.

Strong beer is very nourishing, and may be employed with advantage as a medicine, in emaciated habits.

Ales are in general prepared from farinaceous seeds. By fermentation, or by conducting their germination to a certain degree, sugar is evolved. This is extracted by water, which, being subjected to fermentation, forms ale, containing a quantity of alcohol. Barley, from the quantity of sugar it contains, is most commonly, though not exclusively, used for this purpose. Ales are stronger or weaker, however, according to the quantity of saccharine

matter employed, which depends greatly on the state of the farina used.

The juice of malt or wort is not so much disposed to fermentation as the juice of fruits, and therefore requires a ferment to be added to it.

Alcohol thus blended with fermented liquors is not nearly so inflammatory as when used in a diluted state, or even when a combination with acid and sugar.

Wine. The sweet *wines* of Hungary, Spain, Italy, Greece, and the Malaga, Malmsey, Madeira, and Cape wines, if genuine, afford a true medicine to the weak and convalescent.

Of weakly acidulated wines, old Rhenish, Champaign, those of Mosel, of the Neckar, Franconia, and Austria, are the chief; of these the Rhenish, Mosel, and Champaign are the best.

The acid and tart wines, which are apt to produce headach, complaints in the stomach, &c. are those of Thuringia, Saxony, Silesia, and some parts of Brandenburg.

The acidulated sweet wines, such as the common white wine and claret, are wholesome.

The sharp and astringent wines, such as port, Burgundy, the hard kind of Madeira, Sherry and the like, are of a heating na-

ture, and therefore ought only to be used for medicinal purposes.

We ought, so far as we can, to preserve the three constituent parts of wines unadulterated by any substance from the vessels in which they are made. They are all composed of pure spirit, water, and sugar, and when these are alone combined, and aromatics afterwards added to impart to them flavour, we may imitate any wine, while we preserve it free from deleterious qualities.

Negus is one of the most innocent and wholesome species of drink, especially with the addition of Seville oranges.

If wine be adulterated with sulphur, a piece of silver, or even the shell of an egg dipt in it, will become black; if with lime, a thin pellicle will form on its surface, if it be allowed to stand in a glass for a day or two; if with water, when poured on limestone, it slakens it, but if the wine be pure, the lime remains whole.

To discover metallic particles in wine, we have the following test: One drachm of spertastris, potassæ, or cream of tartar, and two drachms of sulphuretum potassæ or liver of sulphure, are shaken in two ounces of distilled water till it be completely saturated; the liquor is then filtered through blotting paper, and kept in a close

stopped phial. Sixteen or twenty drops may be put into a glass of wine, and if a thick white sediment be deposited, the wine contains no metallic ingredients; but if it turn black or even muddy, or of a dark red, if it have first a sweet, and then an astringent taste, it is impregnated with sugar of lead, or some equally pernicious preparation of that metal. If, however, it be of a dark blue, like pale ink, it contains iron in solution; and if white wine be impregnated with copper or verdigrease, it will deposit a blackish grey sediment. The test should be fresh prepared, and the experiment made in the open air.

The brass cocks used to draw off all acid liquors ought to be abolished, as they impart a noxious quality to the liquor.

Ardent
Spirits.

Ardent spirits, when very gradually distilled, consist of nothing but pure spirit and water, and are as wholesome when new as if kept any length of time. When quickly distilled, however, according to the present custom, to save duty, it contains a poisonous empyreumatic oil, the destruction of which is necessary before it can be used with safety, and this is effected by time.

Rectified spirits ought to have only five parts, and proof spirits four-fifths of distilled water in the hundred. The specific

gravity of the former is 835, and that of the latter 930 to 1000.

Although ardent spirits, in the various forms in which it is used, are perhaps the most frequent cause of derangement in the digestive organs, yet in many complaints of these organs it may be used with evident advantage. It is not the use, but the abuse, of ardent spirits that renders them injurious. They may be used in moderation with great propriety, but the abuse of them is always injurious.

Ardent spirits, when taken in moderation, and by a person not otherwise hurt by them, are extremely useful in preventing the bad effects of cold moist atmosphere, of pestilential vapours, unclean occupations, and in a damp military camp.

After violent exercise and heat, a dram of spirits is more proper than cold water or beer, though a cup of tea or other diluent drink is preferable. A dram to remove flatulence can only be serviceable when the stomach is undepraved; but otherwise it is hurtful.

The addition of acid to ardent spirits, as in punch, in general renders them still more prejudicial to the stomach; on the same principle, a dram after fruit is absurd.

Exercise
or Sleep
after food.

It is extremely difficult to lay down rules suitable to all constitutions for their conduct after dinner, as those which may be attended with good consequences to one, may be hurtful to another, and *vice versa*. Thus exercise, sleeping, &c. must be regulated by the feelings of individuals, and entirely given up or persevered in by the good or bad effects produced in consequence of them.

Gentle exercise, before taking victuals, increases our appetite; but when this is indulged to excess, it fatigues and incapacitates every power of the body, and renders it unfit to perform its proper functions.

When the digestion is languid, we ought not to go to bed or to sleep after dinner; for then digestion, with every other function, is carried on with less vigour and more tardily than when awake. Being awake, is of itself a species of exercise necessary for the office of digestion, particularly in those whose powers in that way are weak.

We can more easily digest a heavy meal in four hours of accelerated respiration and muscular action during the day, than in eight hours of sleep.

If sleeping for a short time after dinner, be at all justifiable, it must only be in weakly persons, and those exhausted by age.

When this habit is indulged in, the body ought to be placed rather in a reclining than in a horizontal posture, as, in the latter, headaches are apt to be induced.

Man alone submits his victuals, before using them, to the art of cookery. This is effected by subjecting them, particularly when of the animal kind, to salting, pickling, &c. or by exposing them in various ways to different degrees of heat. This art, however, does not seem either so uniformly or indeed so necessarily applied to a great variety of vegetable substances. It renders the texture of aliments more tender, and consequently more soluble in the stomach.

Modes of
preparing
food.

As it is certainly the gelatinous part of animal food that is the most nutritious, little, if any of which enters into the composition of the fibres, every kind or degree of cooking which such substances are made to undergo, which either separates this quality, or in any way destroys it, must render that meat less nutritious than when it is preserved in combination with the animal fibres. Thus, too much or too long salting, over-roasting, boiling, &c. must all very material-

ly injure the quality of animal food ; while, on the contrary, by moderately boiling, roasting, &c. these substances are at once rendered more tender, easier soluble in the stomach, and more likely to afford nourishment to the body than by being prepared as above. By over or too long salting, &c. the gelatinous principle is destroyed, as is often the case in *ship-beef* ; by over-roasting, baking, &c. it is separated ; and by over-boiling, the nourishing parts of it are diffused in the soup with which it was boiled.

The solubility of meats, in other respects of the same qualities, is greater according as they happen to be farther advanced toward putrefaction. It is owing to this that meats recently killed, are not so soluble as those that have been kept for sometime. All meat of this kind ought, therefore, before it is prepared for use, to be exposed to the open air for a few days, longer or shorter, according to the weather and season.

Fish dried in the open air, and afterwards boiled soft, are easily digested ; but all *salted* sea-fish, as well as smoaked fish, are injurious to the stomach, and afford little nutrition.

If salted meats be taken in moderate quantity only, the salt has the effect of exciting the powers of digestion ; and such meats

are often more easily digested than entirely unsalted meats are. It may, however, with safety, be asserted, that fresh meat, provided it is properly cooked, is more wholesome, nourishing, and more easily digested than salted meat.

Animal food preserved by vinegar is hardly ever so much impregnated with it as to be rendered less digestible or less nutritious. It renders it only less putrescent ; and therefore it is a condiment of animal food, suited, in every respect, to the human constitution.

Salads, eaten with oil and vinegar, require all the powers of the stomach to digest them, therefore ought to be avoided by those of debilitated stomachs. All smoked meat, though prejudicial to the stomach, is more easily digested while in a raw than in a boiled state. The act of smoking had partly separated the gelatinous and juicy particles from the fibres, which boiling entirely removes, rendering the remainder extremely difficult of digestion. Such food, therefore, requires very little of this or any other process.

It has been computed, that, from the dissipation of these juices in boiling, one pound of roasted contains as much nourishment as two pounds of the same kind of meat boiled.

Flesh, therefore, too much boiled; or otherwise prepared in too great a degree, has the juices and animal jelly separated from it, by which the remaining portion is rendered more indigestible.

The modes of preparing meat most adapted to preserve these juices in close contact with the fibres, are the best, such as stewing; baked meat, (not including the paste) is probably the next best method, and next roasting and frying, may then be mentioned.

Eggs, particularly hens, are next in nutriment to milk, and are best when stewed or boiled soft. Hard boiled eggs, pancakes, &c. are heavy for the stomach; so are ducks and goose eggs, and therefore never ought to be used, but by those of the most active and powerful stomachs.

The best way to preserve eggs, is to prevent the external air from affecting their internal parts, by covering them with mucilage of gum Arabic or with varnish.

Condi-
ments.

The whole of our seasonings consist of salt, vinegar, and aromatics. If they be taken in moderation, so as to render the food more sapid, they may increase the appetite

and favour full eating ; and unless taken in such large quantities as to weaken the tone of the stomach, they can scarcely do harm. The condiments of an acrid nature, are chiefly *mustard* and *horse-raddish*. These substances moderately used along with our animal food, stimulate the stomach and assist digestion.

Clean dishes for cooking and for eating these victuals in, are essential to comfort as well as health. The coating of vessels in which our food is prepared, ought not to be made with lead, copper, or any other substances which are apt to impart their noxious quality to the food. Of Vessels.

Not to load the digestive organs, by too large quantities, or improper qualities, either of food or drink, is a matter of the very greatest importance. We ought never to indulge in either of these, so even to render us in the slightest degree unfit for business, Of Moderation in Eating, &c.

exercise or pleasure of any kind. Thus we may preserve our minds in a vigorous, tranquil, happy state, capable of enjoying the various pleasures which this world can afford. We are happy in ourselves, and diffuse the same spirit to all around us. Our sleep is tranquil, our dreams agreeable, and we awake refreshed and contented.

Different is the fate of him who attends not to such things: He has little serenity of mind, and no lasting enjoyment. It is only while gorging himself with various kinds of food, and indulging in inebriating potions, that he experiences momentary delight, and this only lasts at most for a few years. At other times, he is irascible, impatient, and discontented. It is then he plies the various provokers of appetite that he may again enjoy as before momentary relief, and thus gradually, but surely and entirely, destroys the digestive functions.

All the various operations carrying on over this beautiful world, are, by the Divine Disposer of all good, calculated entirely for the use or for the pleasure of the human race. The free use, therefore, of them, according to our situations in life, is a virtue; but rigid abstinence is perhaps little removed in respect to its impropriety, from the opposite extreme.

Were we only to drink when we are thirsty, desist when thirst is quenched; eat when we are hungry, and desist when our appetite is satisfied; perhaps one half, if not greatly more, of our most troublesome complaints, would never be heard of.

A proper measure of aliment, with exercise suitable to it, is highly consistent with health, as giving a nice balance to the several parts of the system; but unusually large indulgences of any sort must be injurious.

Those general rules respecting eating, drinking, &c., which are in pretty general repute, and have been sanctioned by the experience of ages, are, for the most part, tolerably correct; they have perhaps been adopted without reasoning, but experience has proved them to be beneficial.

There are, however, certain constitutions and states of the stomach, which admit of no general rules in living; they must be treated according to the state of the digestive organs.

Perhaps the most rigid attention to rules for eating, drinking, &c., are unnecessary; if the appetite be good, a greater variety of different kinds of food may be indulged in; if it be impaired, a loathing at the particular food that may disagree with us, is felt,

The best general precept in living, is, that every one study himself and his own particular constitution; that he choose and regulate his mode of life accordingly, and that he make his own experience his guide, in whatever he finds most suitable and convenient.

It is not the man who takes comparatively little food, that can be called temperate; but rather that person who makes use of no more aliment than he is able to digest. Moderation, therefore, in every respect, ought to be the first leading principle of those who wish to live long and enjoy good health. Extremes, in the most opposite things, frequently border on each other.

Attention to diet alone has a wonderful effect on different functions of the body; by it, the cold phlegmatic habit is changed to the opposite extreme, and the hypochondriac lays aside his moroseness, and becomes cheerful, contented, and happy.

Animal, in a greater degree than vegetable food, increases the action of the heart, and occasions a frequency of pulse, and some degree of feverishness; even a torpor in the functions, and sleepiness, is induced by it; a small proportion of it, therefore, is useful for the preservation of health while a copious

use of it tends to the production of many diseases.

When the digestion is bad, we ought to avoid all thick meaty dishes, pastry, onions, warm and new bread, and such as is not thoroughly baked. We find also, that the digestive powers, in assimilating oily matters, are very different in different persons, and frequently in the same person at different times.

I believe it to be a pretty generally understood rule, that our food in summer should be lighter than in winter, as the digestive organs, in common with the other parts of the body, are then more relaxed than at any other time.

Light and simple food is indeed in general more nourishing than strong and heavy food. The nourishment they impart is entirely owing to the condition of the stomach, which from various causes is too often in a state of disease. When this is the case, light food can be digested with ease, while strong food only loads the stomach, without producing any beneficial effects.

We find mucilage to be the principal nutritive constituent in vegetables, and jelly or gluten in animal bodies. All substances therefore which contain much jelly, whether animal or vegetable, are nourishing, and par-

ticularly adapted to digestive organs, that have been weakened by disease or otherwise.

To eat slowly at all our meals ought to be a universal rule, for while it is essential to elegance of manners, it contributes to the preservation of health.

The more we eat in quantity, and the drier our victuals are, the more we ought to drink. We ought therefore to take a proportionate quantity of drink to our victuals; a circumstance not always sufficiently attended to by persons of a sedentary life. Weak, well fermented, and well hopped beer, is an excellent beverage; so is cold water, with the addition of a little wine.

To drink immoderately before a meal is improper, because the stomach is thereby swelled, and rendered less fit for the digestion of food; and to drink much during the time of taking food, is improper, from its unnecessarily loading the stomach. Indeed, unless our provisions are salt, we are in general little inclined for drink. When, however, we do drink, it ought to be water, it being most conducive to digestion. A glass of wine or two, particularly for the aged and debilitated, is proper, and conducive to digestion. Whatever we drink after dinner, or during digestion, however, ought

to be taken slowly, and in moderate quantity, for this, either done quickly, or in large quantity, destroys the very process we wish to assist.

For the sake of delicacy, as well as health, the abominable custom of numbers at the same table drinking out of the same dish, ought to be laid entirely aside, and every person at table furnished with a separate glass, or other vessel for his drink.

To eat our meals in agreeable company is at all times preferable to sitting alone. We then eat more slowly and cheerfully, and our victuals digest better than when we are alone, when we are perhaps not so attentive to ourselves, and probably we may, on these occasions, too, indulge in the pernicious habit of reading or writing.

The time requisite to the digestion of a meal cannot be exactly ascertained, as some stomachs digest quickly, and others slowly; there is a remarkable difference in the degrees of digestibility, among the various species of food. But this may serve as a general rule, that we ought never to take a new supply of food till the preceding meal be digested.

Digestion,
&c.

The business of digestion is usually accomplished within three or four hours after a meal; hence the stomach is empty on rising in the morning and the body often enfeebled by long fasting.

To one possessed of a healthy stomach, more nourishing food may be used for a breakfast than is usually taken, particularly if the dinner hour be protracted till late in the afternoon.

All food taken into the stomach is changed into what medical men call chyle, or a sort of milky fluid; and this change is that part of the process of digestion called solution; the next part is assimilation, or when the victuals are animalized. The first of these processes is most probably carried on by heat, moisture, and motion combined, but by neither of them individually, and according to the regularity of these processes, the body is ill or well nourished; more than by the quantity of food used.

In the good as well as the bad effects of eating and drinking, much must depend on the feelings of individual persons; and their good sense, or their folly, will be demonstrated by their persisting in or refraining from the use of substances, which with them are difficult of digestion.

It may be proper to remark, that, although the stomach possesses a power of digesting various articles of different qualities at once, it is nevertheless improper to destroy its powers by thus constantly exciting it to such an unnatural state of action.

Acidity in the stomach I believe sometimes to be a cause, sometimes a consequence, of weakness in it. When indigestion, and consequently an infirm habit of body, arises from acidity generated in the stomach, all food apt to produce this, of which vegetable has no inconsiderable share, ought to be avoided. In such individuals, till this disposition to form acid be destroyed, even the use of full meals of any kind of food, produces in general very distressing consequences for several hours after they have been used.

Unless these powers are very much deranged, eating frequently of light easily digestible aliment, but never so much as to satiate the appetite, will generally restore it to its former state. On these occasions, the detestible practice of habitual dram-drinking cannot be enough condemned. I say habitual, for a little spirituous liquor may be used with great propriety.

Magnesia and rhubarb, to correct the acidity with bitters, &c. to strengthen the tone of the stomach, are the best methods of removing it.

We find that, owing to the particular nature of some substances, as well as to the particular states of the digestive organs, some kinds of food pass through the alimentary canal without affording any nourishment to the body. To remedy this, we must know whether the fault rests with the organs, or with the food, which may very easily be ascertained.

If the state of the evacuations be disordered, the most rigorous observance of dietetic rules will be insufficient to insure our health; while, on the contrary, most of these rules may be neglected for some time without any injurious consequences, if the evacuations be regular.

Inattention to suitable food and drink renders laxative medicines necessary, which by proper attention to these particulars might be dispensed with. By this inattention we, at length, produce diseases of these parts, which often require the aid of the most active medicines to remove.

Whatever dietetic means may be adopted to promote evacuation of the bowels, ought to be employed either from three to four

hours of the time we wish to succeed, or immediately before going to bed. The substances which promote the operation of any mild laxative are rye-bread, spinage, boiled fruit, particularly prunes, decoctions of currants, and the sweet and emolient vegetables, particularly the beet-root, sweet table-beer, infusions of malt, apples, pears, &c.

No medicine whatever ought to be used as daily food,—a favourite custom among invalids, valetudinarians, and the votaries of quack medicines.

Either food or drink taken in such quantity, or of such quality, as cannot with ease be digested by the stomach, must induce disease of that organ, or of the system in general; and medicines taken under such circumstances to assist the digestive powers, only tend in a greater degree to enfeeble its powers when their operation has subsided.

The glutton in vain has recourse to emetics, laxatives, fashionable stimulents, and strengthening bitters, to remove the effects of those disgusting habits which he has contracted. The emetics, purgatives, &c. only yield him momentary relief; for still, while he is able, his habits are persevered in, and at length totally derange his digestive

organs, and lay the foundation of some incurable disease.

On the contrary, by a proper attention to diet, &c. the disposition of persons may be entirely altered, the morose may become cheerful, and the hypochondriac may be transformed into a contented and happy member of society.

SECT. IV.—*Police for Manners.*

Cleanli-
ness.

Under the present head, cleanliness, in every variety of form, is a principal object to be attended to.

The streets should be washed and kept clean from filth, carrion, and all manner of nuisances, which should be carried away in the night-time: nor should lay-stalls be suffered to be too near the city. Beggars, and idle, and dirty persons, should be taken up, and such miserable objects, as are neither fit for common hospitals, nor work-houses, should be provided for in an hospital of incurables; for while puddles of putrid nastiness, and piles of reeking dung, or living beings equally filthy, are incessantly exhaling their poisonous steams, that magistracy consults very imperfectly the public

health, which neglects the removal of such common nuisances.

In respect to houses, the first care ought to be to keep them clean ; for, as nastiness is a great source of infection, so cleanliness is the greatest preservative ; which shews us the true reason why the poor are most obnoxious to contagious diseases. That they are so, is a fact that must be obvious to every one ; but owing, for the most part, I believe, to that torpidity of mind, so incident to individuals, in the sphere of life in which they are obliged to move, they seldom or never, indeed, attempt to reflect on the dangers which they thus daily subject themselves to.

It is melancholy, that such immense numbers of people should be thus sacrificed, when manners of a more pleasant, and in every respect less irksome, nature would relieve them. Since, however, these steps are not likely to be voluntarily adopted by them ; it were much to be wished, that the proprietors of these houses, were obliged to take out a license, and frequently to purify them under the eye of an inspector. And even after all this, every possible care ought still to be taken, to remove whatever causes are found to breed and promote contagion. In order to this, the overseers of the poor

should visit the dwellings of all the meaner sort of the inhabitants, and wherever they find them stifled up, too close, and nasty, should lessen their number, by sending some of them to other lodgings, and should take care, by all manner of provision and encouragement, to make them more cleanly and sweet.

This mode of procedure would answer, at least, two purposes. It would prevent those, whose minds are degraded to the lowest pitch, and to whom nastiness and cleanness are equally pleasant, from infecting the neighbouring air, by the exhalations constantly issuing from their persons, &c., and thereby disseminating the most loathsome of all diseases. It would produce a still better effect on another class of individuals, whose minds had not yet sunk to that gulf of depravity with those just mentioned; but who, by perseverance in similar habits, would soon be equally deprived of every feeling of their nature. With such people, the very chance of being caught by an inspector, for instance, in any act or state of nastiness, would make them ashamed: to prevent which, they would unquestionably exert themselves to the utmost of their power, independently almost of compulsion. The nastiest classes of people, were all in possession of such feelings at one time of their lives, and

it is at that time that such a police as the present will have its best and most permanent effect.

Were, however, the effects of such contagious emanations to be exclusively confined to these classes of people alone, it would be bad enough; but when it is recollected, that every description of people, in whatever station of life they may be placed, are, from the manner in which the different ranks in life are allied to each other, equally or nearly exposed to such chances of being infected, the prevention or removal of these sources becomes a matter of the greatest importance to them all.

It would appear, from Mr Howard's state of prisons, that, in general, much more regularity and order prevailed in these places on the continent; and consequently, the good effects resulting from it were more conspicuous, than in almost any of them in our own country. The neatness, cleanness, industry, and regular conduct of the prisoners, with the humanity and attention of the magistrates and governors, cannot be reflected upon without feelings of a very different nature from what we must every day experience in other countries; our own not excepted, where scenes of a very opposite complexion are daily to be met with,

In these places, it is absolutely incumbent upon those who have it in their power to command such things, to issue orders for that purpose, while they attend to see, or appoint others to see, that such orders are executed. Instead of this, debauchery and riot are too often to be met with in these places, and cleanness and regularity are only attended to, in proportion to the pecuniary resources which the prisoner may be able to command. Without the institution, therefore, of such regulations as I have hinted at, justice can never be done to the health of those persons.

The persons of all prisoners ought to be made clean on their entrance into the prison, and regularly preserved in that state, by cold baths, &c., as long as they remain there; and encouragement ought to be given to those who seem most attentive to this necessary preventative of disease. The cleanness of their clothes ought to be particularly attended to, as well as their bedding, which ought to be daily aired and beat. Stair-cases, galleries, cells, &c., ought to be regularly scraped and washed, as well as the sewers and drains.

The same regulations here proposed, ought to be equally attended to in ships, dwelling houses, &c. In ships, no place

between decks should be wetted after sunset; the births then begin to be crowded, the current of air is obstructed, and the humid vapour is to the men like a warm relaxing bath of the worst sort, being replete with unwholesome, moist effluvia.

In such of the above places as may have the air contaminated within them, it is customary, in some countries, to strew the floors of the apartments with shoots of fir, &c., for the purpose of purifying it; but it is uniformly granted, that the admission of pure air into them, is more beneficial than all the shoots of fir that can be used for that purpose. I think it is Dr Priestly who mentions, in some of his experiments, that, in order that the process of vegetation may produce any good effect in purifying the air, it is necessary that such substances should then be growing; for, unless their roots were in the ground, he did not find that any benefit was derived from them; but sometimes a very contrary effect.

In addition, however, to the admission of fresh air, into tainted apartments of any description, the rooms should be well scraped and washed with lime and water, during the act of effervescence.

Fumigations of sulphur have advantageously been recommended for purifying the

apartments of the sick, and common vinegar, the acetous acid, may be ranked among the best purifiers for substances that admit of being immersed in it : but it is not sufficiently volatile, either when cold, or even with the aid of heat, to be employed with advantage, in the fumigation of confined apartments.

Where individuals are crowded and confined together, the whole surface of the body should be frequently purified, by exposure to air and ablution. Mr Good observes, that there is a laudable means of cleanliness made use of at the charity school at Yarmouth ; viz. that of sending the boys to bathe in the sea three times a week, during the summer, under the inspection of a master. It is strange, that this salutary habit should not be more universally practised. In many parts of our island, we are as conveniently situated to receive any benefit that can arise from this practice ; and our evident neglect of this, in common with many other of our duties regarding cleanliness, is often productive of irreparable mischief.

It may here be remarked, that we ought not to sit in the room where we dine, or take victuals, till it be aired again. The temperature also of a sitting room, should

not exceed 60° of Fahrenheit's thermometer; that of a bed-room may be about 50°, as the medium temperature of our climate is between 50 and 55°. Immediately approaching the fires, when passing from cold air into a house, is highly improper.

Water closets ought to exist in, or in the immediate neighbourhood of, all houses; there can be no excuse for the omission, as every house, placed in whatever situation, can easily admit of such a convenience.

Dry and clean body and bed-linen, are equally necessary to comfort, as to health, and we ought to avoid all uncleared clothing that had been used by a sick person.

With regard to personal cleanliness, I may observe, that when the nails on the toes are suffered to become too long, they are not only uncleanly, but are apt to grow into the flesh, and occasion pain and lameness.

Foulness also of the teeth imparts a foetor to the breath, which is extremely disgusting. Tooth-ach, indeed, for the most part originates from inattention to the teeth. Want, however, of caution in cleaning them, is as great a cause of disease, as total inattention to them.

Of the
Teeth in
particular,

They ought always to be cleaned on getting out of bed, before and after every meal, and before retiring to rest. The use of pins, needles, or any metallic instrument for cleaning the interstices of the teeth, does much harm ; a quill, or a piece of wood, is much better. Provided they are cleaned frequently, we have no use for a hard brush for that purpose, a soft one answers all the purposes, while the teeth and gums do not suffer from it. A tooth-brush made of sponge, is perhaps preferable to any other.

Most of the substances sold for cleaning the teeth, are of an acid or an alkaline quality, which certainly may whiten them, but, at the same time, either destroy their enamel, or the gums. Powdered wood charcoal is an excellent tooth powder. Peruvian bark is also very good for this purpose, but in some it renders the teeth yellow. Perhaps then, the best kinds are plain powdered wood charcoal, or a piece of loaf-bread completely charred and reduced to a powder, but, in most instances, plain-water answers very well.

When yellowness of the teeth, or *tartar* adhering to them, arises from affections of the stomach, which often happens, we must

remove the cause of it, for topical remedies will do no permanent benefit.

The various affections of the teeth, gums, &c., are often overlooked till they are incurable, and an artificial set becomes necessary. Attention to several little particulars, might not only have rendered this unnecessary, but might have preserved them entirely free from disease, while those teeth unaffected by disease, might have been retained in the utmost regularity of order.

Tartar in some persons, allowed to collect in small quantity about the roots of the teeth, at length renders them loose, notwithstanding the greatest care that can otherwise be taken of them. The original cause of this being too often overlooked, the disease is generally termed scurvy in the gums, and treated accordingly.

Teeth may be prevented from becoming irregular, in their order, by properly directing them in the direction we wish them to assume, by means of a ligature fastened to the neighbouring teeth; or they may be prevented from growing longer than those immediately in their neighbourhood, by having a small gold cap put over them, and attached to the neighbouring teeth by a ligature, which ought to be tightened every morning.

A hollow tooth well cleared of all the decayed matter, and properly washed, may, by immediately after plugging it with a piece of gold, be preserved for many years entirely free from disease.

With regard to the first and second set of teeth, those of the first ought to be pulled when they produce irregularity in the growth of the second. In the first set of teeth, this operation is attended with no pain, on account of the shortness of their fangs, which are almost entirely absorbed in consequence of the pressure of the second set. Great care, however, ought to be taken in pulling these teeth, that no injury may be done to the second set, situated immediately beneath the back, and behind the front ones.

With regard to pulling teeth in general, simple as the operation may be, it is rarely well performed.

To conclude this subject; Addison, in No. 631 of the Spectator justly observes, that several vices, destructive both of mind and body, are inconsistent with the habit of cleanliness. Captain Cook found, in his voyage round the world, that such men as he could induce to be more cleanly than they were disposed to be of themselves, be-

came at the same time more sober, more orderly, and more attentive to their duty.

It must therefore be evident from these, as well as from many other instances that might be adduced, that attention to cleanliness, while it is conducive to the preservation of health, has considerable influence even on the preservation of the moral character.



In temperate climates, the head ought to be thinly covered, or indeed it need scarcely be covered at all. In very hot climates, however, it must be sufficiently defended from the dangerous effects of the vertical rays of the sun. Dress.

Artificial loads of dress on the head, of whatever kind, must be extremely injurious.

Light hats, of a white colour, such as straw, &c. are greatly preferable; but, when these cannot be worn, the black hat ought to be, during the heat of the day, covered with a piece of a white paper.

It is of immense importance, particularly for those with tender eyes, to have the under side of the brim of their hat or cap lined

with green or blue, particularly the first, as they ought, above all things to avoid white or any dazzling colour.

All coverings of the neck should be loose and as sparing as necessity or fashion will permit; indeed, except in particularly damp or cold weather, we may want them entirely.

All tight sleeves of gowns, wrist-bands, shirts, bracelets, &c. ought be carefully avoided; they occasion swelling of the veins on the back of the hands, and a numbness or rigidity of the joints.

Tight garters ought to be avoided, particularly as they are an unnecessary piece of dress, since the purposes for which they are used, may be effected in other ways less hurtful to the comfort as well as to the health of the individual. The stockings may with ease be attached to the waistband.

Perhaps no part of the body ought to be so well protected from cold and moisture as the feet. There is such an intimate connection between the different parts of the body and the feet, that attention to them ought never to be overlooked. When any part, even the most important of the body, has suffered from previous disease, cold and damp, applied to the feet, uniformly occa-

sions a recurrence of such complaints in a remarkable degree.

To prevent this, woollen stockings are certainly preferable to any other kind of covering. Woollen stockings may be had sufficiently fine, and are certainly of all others the best ; when silk, or any other kind of stockings are deemed necessary, they can be worn over the former without occasioning any disagreeable increase of bulk. Above all things, the feet of the stockings ought neither to be too tight nor too wide. The former cramp the feet and distort the toes ; the latter injure the skin by their friction.

As the protection of the feet against dampness has always been considered of the utmost importance, while for this purpose, cork soles, fur lining, &c. for the shoes, and socks of various kinds, have been used, a more simple, and, in my opinion, a more effectual preventive has been entirely overlooked. I allude to the use of cere-cloth slippers over the stockings. If shoes be worn, these may be exactly fitted to the foot, and not permitted to extend above the edge of the shoe ; if boots be worn, they may be of sufficient length to cover the ankle joint. Through this substance no moisture can pass, and if it should penetrate the shoe or the boot, it cannot reach even the

stocking immediately covering the foot. This is a habit I should strenuously recommend, having witnessed its beneficial effects in several instances.

Broad pointed and sufficiently long boots or shoes, where the foot lies easily, are equally neat, and much more useful, than those in which the foot is pinched so as to occasion pain.

To those who have not the means or opportunity of procuring the water-proof leather, I shall suggest a method of preparing this species of leather, at a very small expence.—One pint of drying oil, two ounces of yellow wax, two ounces of spirit of turpentine, and half an ounce of burgundy pitch, should be carefully melted together over a slow fire. Any essential oil of better smell may do where turpentine is offensive. With this composition, the new shoes, &c. are rubbed, either in the sun or at some distance from the fire, with a sponge or soft brush, this operation is to be repeated as often as they become dry, until they be fully saturated. In this manner, the leather becomes impervious to wet; the shoes or boots made of it last much longer than when made of common leather, and acquire such softness and pliability, that they never shrivel nor grow hard and inflexible.

It deserves to be remarked, that the shoes or boots thus prepared, ought not to be worn till they have become perfectly dry and elastic; as, in the contrary case, the leather will be too soft, and wear out much sooner than even the common kind, without this preparation.

Our night dress ought to be particularly attended to. A thick worsted night-cap is very improper, as forming a vapour-bath upon the head; the thinnest linen or cotton cap is fully sufficient. The shirt-collar and wrist-bands ought to be very loose; and, if we wear a neckcloth during sleep, it must likewise be loose. Those who are subject to coldness of the feet ought also to wear woollen stockings; but not those which had been worn during the day.

Instead of the barbarous custom of binding a child in a piece of cloth, so that neither arms nor legs are allowed to move, and then immersing it in a very soft bed, with a great quantity of clothing, the child ought to have his extremities at perfect liberty; and, from birth, to lay on soft, cooling mattresses composed of horse-hair; over which are placed thin blankets, or a cotton quilt, which cannot incommode the body.

Animal wool, or rather cotton cloth, proportioned in quantity to the state of the

climate in which we live, seems preferable to any other covering. While it absorbs the perspired matter, it preserves, from its power of conducting heat being slow, an equality of temperature over the surface of the body, which cannot be maintained by any other substance ; and, on this account may, even in the warmest climates, be preferred to any other clothing. Such clothes are most proper in spring, autumn, and winter. Even in summer, in our variable climate, we ought not rigidly to adhere to thin clothing, except when the weather is favourable. By too rigidly adhering to set rules in dress, we often stop perspiration and induce disease.

In all large manufactories, where constant exposure to great fatigue and heat are unavoidable, or in our armies, when stationed in cold and moist climates, the good effects of flannel worn next the skin is evident. Without it, many diseases are common, which never appear when this expedient is adopted.

The ingenuity of the ladies perhaps could not be better exerted, than in contriving some method of preventing such havoc as is yearly occasioned among them from thinness of dress. Surely the fair sex may contrive some form of dress which may prevent bad

effects on the constitution, while at the same time their elegance of figure may not suffer in the smallest degree.

Persons who clothe themselves warmly, or live generally in uniform temperatures, are affected by slight variations, which others of hardier habits totally disregard; and, on the same principle, those parts of the body which are commonly exposed to the irregularities of the season, are less susceptible of the sensations of heat and cold than such as are more protected from them. We ought, however, to approach the one extreme of dress from the other slowly and gradually.

Dress ought not to be uncomfortable from its weight or tightness. All dresses of leather, particularly when they are tight, which in general they are, ought carefully to be avoided. Indeed, any part of dress, of either sex, which compresses or binds any particular part of the body, ought most assuredly to be avoided.

Every living being, in order to enjoy good health, must breathe the fresh air several hours daily. Exercises.

The principal and most useful sort of exercises within doors are, tennis, hand-ball, dumb-

bell, dancing, fencing, shuttle-cock, chamber-horse, or tremoussoir. The best without doors are walking, bowling, riding in wheel-machines, or on horse-back ; and golf should also be practised, if a proper field can be had at hand.

The active sorts of exercise are best suited to the young and the athletic, the passive are most suitable to the old and the debilitated. The times best suited for taking exercise, are, in general, before eating ; and, provided these are never carried to excess, they invigorate the whole system in a remarkable degree.

Regular and daily exercise ought not to be omitted by any class of individuals, particularly if their general avocations confine them much within doors. In our walks, however we ought to avoid all paths likely to excite melancholy and unpleasant sensations.

An agreeable companion contributes much to serenity of mind ; but let us rather go alone than in dull or frivolous company, or with those of depraved or vitiated minds.

The most proper and enlivening sort of exercise is walking, when performed, in moderation, in a pure dry air, in whatever season of the year. In the summer, we must avoid the oppressive heats of the sun ; and in winter, cold and rough weather, and always pre-

fer the open country to the contaminated air of a town or city. We must avoid the influence of stagnant water, decaying foliage, damp and marshy meadows, &c. Hills and elevated situations ought to be preferred, where we are not in general exposed to either.

Walking a-foot is preferable to riding on horseback, and either of them ought at all times to be preferred to habitual riding in a close carriage.

Riding on horseback is an excellent gymnastic exercise, by which all the muscles are kept in reciprocal motion, and gentle perspiration of the whole body is induced. To the hypochondriac, therefore, it is an inestimable remedy. The most proper time for riding is in the morning, and one hour is in general quite sufficient. Riding, however, is not adviseable in cases of hemorrhoids, ruptures, gravel, &c.

Riding in a carriage is not in general a healthy exercise, on account of the close confinement, and want of that motion which is necessary to the health of the body. If, however, from weakness, age, or other circumstances, we do use this sort of exercise, we ought to keep at least one of the windows open to promote free circulation of air.

Sailing on lakes or rivers, or short voyages at sea, are excellent exercise for the weak, the nervous, and hypochondriac.

Speaking is an excellent exercise either for male or female, if used in moderation. Literary men, who have seldom leisure or opportunity to take sufficient exercise, ought to speak or read aloud a certain portion of each day. Singing, too, is of infinite benefit on the same principle.

To rub the body with woollen clothes, or with soft brushes, is very salutary in invigorating the cutaneous vessels, and in removing partial cramps, &c. This practice is most to be preferred in the aged and infirm.

No exercise of any kind, if it be taken for beneficial effects, ought to produce fatigue, or it may be attended with contrary effects. To continue any kind of exercise till a profuse perspiration or great lassitude take place, cannot be wholesome. But a good appetite after any kind of exercise, is the greatest proof that it has not been carried to excess.

We neither ought to begin nor finish exercise abruptly, nor ought we to take it within doors, particularly in small apartments, but in the free open air. In order that we may reap most benefit from exer-

cise, we never ought, during it, to occupy our mind with any serious, but rather with some light agreeable objects. Neither ought we to force ourselves to take exercise, as that is always improper.

The changing of one kind of exercise for another, although perhaps not different in degree, has often very beneficial effects on the health.

After having taken exercise, we should not rest on a cool or a green spot, and still less expose ourselves to a current of air. A place mildly warmed by the rays of the sun in summer, or a moderately warm apartment in winter, so that gentle perspiration may not be suddenly checked, are greatly preferable.

General bathing is highly beneficial, or, where that cannot be used, washing the whole body, at least once a-day, should never be omitted. The enlivening effects of this practice, where it can be used with safety, (for there are individuals who cannot use it,) must have been felt by most people.

After fatigue, or violent passions of the mind, the tepid bath is singularly refreshing. When it is judged right to use the warm bath, the proper degree of heat, for young persons, ought to be from 86° to 96°,

or 98° of Fahrenheit's thermometer, and for the aged about 100°. Warmer baths, particularly if they be used very often within a short space of time, produce debilitating effects, but, at the above temperature, they are invigorating.

Count Rumford asserts, from experiment, that a warm bath at 96° of Fahrenheit, instead of debilitating the system, as has been asserted, invigorates the body in every respect; and he further states likewise from experiment, that cold air, either damp or dry, produces no disagreeable effects when applied to the body immediately after the warm bath has been used.

In cold bathing, the head ought to be wet first, and afterward the whole body as rapidly as possible. The *shower bath* is on this account preferable in most instances to any other. The body ought to be wiped dry immediately after leaving either of these baths.

It will be extremely difficult to give a preference, either to the cold or the warm bath, as in different constitutions they are individually useful, and the contrary. The cold bath, however, ought to be used with extreme caution in children, or rather infants. Indeed, the cold bath, gymnastic exercises, bodily fatigue of every kind, and all

expedients to brace and invigorate the constitution, ought only to be adopted under certain limitations, viz. with a proper regard to particular cases and circumstances, and these severe remedies ought not to be universally nor indiscriminately recommended as means of prolonging life.

We ought not also to persist in the use of either cold or warm baths, if the body, on coming out of them, feels uncomfortable.

The exercise of swimming having the advantage of a cold bath is very advantageous. The danger to be apprehended from this sort of exercise is from imprudently plunging into the water after the body has been heated, and when the force of the circulation is declining.

Dancing in moderation is a good exercise; and the room in which it is performed ought to be cool, but without admitting currents of air, and without too much smoke from candles. After dancing, a change of linen, and coffee, or tea, ought to be taken before exposure to the air. I am convinced, that inattention to these particulars occasions the death of many thousands, of young ladies in particular, who might otherwise have lived in good health.

I sincerely wish that the present age would exert itself in restoring those various exercises which the ancients made a part of their duty, and which have been so much neglected for the two or three last generations, that in all probability in a few years hence many of them will be so completely forgotten, that their very names will not be found but in dictionaries.

“ ————— By arts like these
 Laconia nurs'd of old her hardy sons ;
 And Rome's unconquer'd legions urg'd their
 way
 Unhurt, thro' every toil in every clime.”

Riding on horseback, particularly by ladies, is not so common as it ought to be. An academy ought to be appropriated in every town to instruct them in that art. Not only their health, but their external charms, would thereby receive advantage.

Every one, however, must be aware, that indulging to excess, even in the most healthy exercise, is at all times highly prejudicial. In all these duties, therefore, moderation, particularly at first, must, if we expect to reap benefit from them, be our principal object.

"Begin with gentle toils ; and, as your nerves
 Grow firm, to hardier, by just steps, aspire.
 The prudent, even in every moderate walk,
 At first but saunter ; and by slow degrees
 Increase their pace." For,
 "When all at once from indolence to toil
 You spring, the fibres, by the hasty shock,
 Are tir'd and crack'd, before their unctuous
 coats,
 Compress'd, can pour the lubricating balm."

In respect to exercise, there is a very
 great fault frequently committed by those
 who are inclined to corpulency, viz. that of
 taking too much and too violent exercise,
 in order to reduce themselves. They would
 do well to consider, that this state of the
 body is not permanently reduced by these
 means, neither is leanness remedied by little
 exercise and great eating. Debility is equal-
 ly induced by both used to excess.

While the body remains in a state of to-
 lerable health, all the useful parts of food,
 &c. taken into the stomach are changed in-
 to a milky fluid, or chyle : the refuse is use-
 less, and ought, at least once a-day, to be
 evacuated to prevent its occasioning diseas-

Evacua-
 tions.

es, such as headachs, difficult breathing, flatulency, eructations and spasms, or peevishness of temper, general lethargy and hypochondriasis.

Perspiration is moderately increased by gentle bodily exercise, tepid bath, diluent drinks, and mild sudorific medicines. The daily loss of weight which the whole body experiences by the escape of this perspirable matter, is estimated by Haller at about 60 ounces in the warmer climates, and from 56 to 30 in more temperate climes.

Evacuations which are moderate, a proper state of perspiration, and all food of an aperient quality, and easy digestion, may be considered as contributing to a joyful state of mind. If, on the contrary, too violent preternatural discharges take place, they ought to be checked with judgement and circumspection; and we should endeavour to lead, but not to force, nature to adopt a more salutary mode of operating.

Persons troubled by unusual night sweats may derive much benefit from acids of any kind taken before going to bed, or by a dose of cream of tartar. If these do not remove it instantly, recourse must be had to medical aid, as these sweats sometimes depend on a deranged state of the whole system.

In *strangury*, *dysuria*, and *ischuria*, warm fomentations to the parts, with a smart dose of physic and diluent drinks, sometimes with the abstraction of blood from the general system, with blisters to the parts, are necessary for their removal. The treatment, however, of these affections must greatly depend on their causes, as well as on the state of the general system.

Dominion over our passions and affec- Passions.
tions is an essential and indispensable re-
quisite to health. And nothing is better
adapted to protect us against all the uneasy
and turbulent emotions of the mind, than a
temperate and active life.

Hope is the most favourable state of mind
to health, and has frequently preserved the
serenity, and prolonged the existence, of
those whose situation appeared to be for-
lorn. A light and easy temper, more apt to
be influenced by joy than depressed by sor-
row, contributes greatly to preserve the
health, even when bodily exercise or free
exposure to the open air, cannot be indul-
ged in.

It is always, however, difficult to suppress passions that have already made some progress. We ought invariably to be separated from the object which occasions any violent passion, as we find that difference of scene has often a wonderfully beneficial effect. One affection also assists in subduing another of an opposite nature.

Music, likewise, to one possessed of a musical ear, has often a wonderful effect in quieting the mind. We, however, ought to make proper choice of the kind of music, as certain kinds of it have a tendency rather to increase than allay paroxysms of passion.

We ought to observe strict temperance after a fit of passion. All strong drinks are then hurtful, but any mild liquor, such as tea, coffee, &c. is very beneficial.

In disappointed love, we ought to force ourselves to active employment, so that we may suffer slight fatigue; we ought to observe temperance in eating and drinking; with strict abstinence from strong and heating food and liquors; we should likewise avoid effeminacy, solitude, and too much rest, and pay the most rigid attention to modesty and purity of manners. He, it is justly observed, whom neither violent joy convulses, nor deep melancholy corrodes, and

whose career of life is not chequered by too sudden vicissitudes, may, with some probability, expect a long enjoyment of that life to which he has become habituated.



Sleep is most necessary after violent pas- Sleep.
sions, which exhaust the frame more than the most fatiguing bodily labour. Hence many persons never sleep so soundly as when they are afflicted with grief or sorrow.

A bed-chamber ought to be spacious and lofty, with dry walls, and never on the ground floor. It ought to be exposed to the early rays of the sun, which enlivens and incites man to rise after he has been refreshed by rest. The windows ought never to be open, (particularly in this country,) during the night.

Beds in winter ought perhaps to be made of feathers, but in summer we should prefer mattresses of horse hair, or, if we be economically inclined, dry moss will answer as a substitute. Every bed ought to be so made that it may slope down imperceptibly toward the feet.

The most proper posture for the body during sleep is upon one side, with the limbs slightly bent ; and, to healthy persons, it is of no great consequence which side to lie on be preferred.

The proper duration of sleep in adults is usually settled at six or seven hours ; in children and the aged, from eight to nine hours. This, however, will scarcely admit of precise rules ; but if when we first awake our mind be chearful and active, it is the most certain criterion that we have slept sufficiently ; but when this is not attended to, a lax phlegmatic body is the consequence, with a mind irresolute, indifferent toward every object, and totally incapable of energetic efforts.

We should not sit through the day in the room in which we have slept, as bed-clothes, particularly feather beds, part slowly with the exhalations which they have imbibed during the night.

General
arrange-
ment of
Time.

In the twenty-four hours, eight of them ought, if possible, to be employed in useful occupations, eight at meals, amusements, or recreations, and eight to sleep. This, or as

near it as possible, is the most beneficial way of occupying our time.

Various circumstances respecting the physical education of children contribute in a great degree both to their strength and regularity of form, as well as to their mental acquirements ; such are exposure to air, well ventilated nurseries, in the best aired part in the house, and exposed to the cheering rays of the sun ; regularity and great attention to bodily cleanliness ; no obstinate perseverance in any particular kind of food, which rather ought to be varied according to the particular effects produced on the child's health and spirits by it. Attention to these, and several others, seemingly matters of but ordinary importance, is of the very greatest utility. Thus, we may see fine healthy children scarcely at all affected by the vicissitudes of climate and weather. All the natural changes of the body take place in regular and uniform order, the mental faculties expand by degrees, and the infant is not matured into manhood before he has completed the term of youth ; and, every stage being thus properly and natural-

General
Treatment
of Infants.

ly proportioned, we contribute greatly to the future chance of the health and happiness of the individual.

Artificial plans of bracing the bodies of children ought not to be persevered in, if the infant seems to have a strong and lasting aversion to them.

Conclud-
ing Obser-
vations.

Upon the whole, it may be observed, that too rigid an observance of those very means which conduce to health occasions diseases, and that in this way the best regulations may be perverted. If the duties or amusements of life are pushed in one uniform course, habits are contracted from which it is dangerous to depart. He who has been accustomed to regular exercise, cannot relinquish it without danger; and he, who has always contained himself within the bounds of temperance and moderation, may suffer from the least casual deviation from these wholesome laws. Those in health ought not therefore to be strictly confined to rules, but inured to variety; yet whoever wishes to preserve that inestimable blessing, a serene mind, and a sound body,

must pay some general attention to his manner of life.

CHAP. III.

POLICE FOR DISEASES.

SECT. I.—*Police for Contagion, Infection, &c.*

The late Dr Gregory judiciously says, Introductory Observations.
 “there are so very few diseases that can be pronounced, in their own nature, incurable, that I would wish you to annex no other idea to the phrase, incurable disease, but the idea of a disease which you do not know how to cure.”

The practical part of medical science requires, from its importance, as well as from the conjectural state in which it stands, our greatest attention. But it is seldom that

we have an opportunity of witnessing improvements in the practice of medicine; founded on just and rational reasoning. Indeed, so little encouragement is given to such a mode of investigation, compared to what is obtained by those, whose sole object it is to ingratiate themselves into the good graces, and work upon the failings of those they attend, that most men prefer the latter to the former. Thus, I am convinced it is, that the art of pleasing, rather than of discharging duty, has often, perhaps, thrown a helpless family upon the mercy of a friendless world, or deprived parents of a family, who, had another mode of acting been adopted, might have lived many years.

Considering, therefore, the many disastrous consequences which, less or more, follow the death of almost every individual, it surprises me, that the practice of physic on rational principles, comparatively an easy task, should be thus delayed, except in the mere name, while that which hath nothing but the cunning and artifice of the possessor to recommend it, even while death in various forms may be the consequence, should be held in the highest estimation. Under these circumstances, death is almost never attributed to the inattention, or even ignorance of the physician, but to

the inveteracy of the disease, which he contrives to convince them is of a dangerous nature, while, at the same time, he assures them of his perfect knowledge of these complaints in general, and enumerates an amazing number of the same kind, that *he* had cured on former occasions.

It is owing to this, that, from time to time, the most illiterate men, by making themselves perfectly acquainted with the failings of the human character, prevail on mankind to believe that *they* possess certain specific remedies for the cure of every disease; and thus, even in our own island, many thousand lives are yearly sacrificed, solely for the emolument of professed quacks.

The immense quantity of quack drugs used in Great Britain, is indeed a disgrace to our country, not but that many of them are good medicines, but that their being used indiscriminately for every variety of complaint, and in every stage of them, is a demonstrative proof of the danger that must result from them.

I am sorry that similar customs, though perhaps not to such extent, are daily practised by too many whose professional accomplishments and general respectability require no such disgraceful stratagems to make

them known. For quacks are perhaps justified in vending their drugs, when the ignorant and the vulgar apply for them ; but it is indeed melancholy, to hear even a professor of a University, not only recommending them in his class, but to see him, in private practice, loading his patients with potions of which he knows not the composition.

Specific remedies are indeed very low in the opinion of every respectable medical writer and practitioner, and it were well, when they are thus sunk in estimation, that the practice upon such principles were more completely discountenanced than it is. No physician, says the late Dr Gregory, has the comfort of thinking himself possessed of an infallible cure, even for the scratch of a pin.

With respect to the cure of diseases in general, I think I am warranted to observe, that too great officiousness in prescribing a multitude of drugs must be, in every instance, hurtful. In this point of view, I have no hesitation in asserting, that medicines do more harm than good. An immense multitude of drugs are often prescribed by practitioners, that are at least useless, if not hurtful, arising, for the most part, from our want of knowledge of the mode of action of these substances. We have but an imper-

fect knowledge of this, even in many of our best medicines, which is the reason that we employ them often with so little advantage; and it is owing to the same reason; that we employ such a great variety of useless medicines, which can be of no service, and must uniformly oppress and destroy the digestive organs. In short, I have no hesitation in asserting; that either the habitual, or even occasional use of medicines, before we have failed in effecting our purpose by simpler means; viz., exercise, diet, clothing, &c. is never adviseable, and very frequently must be attended with the most dangerous consequences.

I should even wish that those medicines, upon whose peculiar action we can calculate with considerable certainty, were as sparingly as possible used in practice; and, instead of attempting, by the mere force of such medicines, to drive away a disease; our attention ought to be directed, in a great measure, to other points which, *in practice*, are too often deemed unimportant. The medical attendant, who can remove his patient's disease with the smallest quantity of medicines, particularly if they be of an active nature, is acting in the greatest conformity to those duties which he owes to the public, and in obedience to those rules which every

candid and honourable man ought to make his greatest boast. The very dangerous custom of prescribing fresh budgets of medicines at every visit, is too evident, and no person who will consider for a moment, can be deceived by such a practice. On the part of the medical attendant, it is taking advantage of that confidence which the public has been pleased to place in him, and which ought not to be abused. I should imagine, that the physician cannot do his patient a greater favour, than to remove his disease entirely without medicines, and merely by properly directing his attention to the regulation of situation, clothing, exercise, diet, &c. ; and, while there remains a probability of removing it by these means, to reserve the exhibition of medicines of a more active nature, till these have evidently failed in their desired effect. Although, from the mischievous officiousness of the opposite plan, assisted by consultations, visits, &c., the disease may suffer partial alleviation, yet this is only changing one form of complaint for another, perhaps more permanent in its nature, and probably more dangerous in its consequences, than the original one. It, from these immense loads of drugs, the whole digestive system, and perhaps that of other functions of the

body, are, for the remainder of life, which often happens, rendered totally unfit to perform their healthy actions, although the original complaint be removed, what benefit has the patient derived from such a change? To prevent, in a great measure, deleterious consequences, no medical attendant, when he prescribes for a well informed, sensible person, ought exclusively to have any secret connected with his profession. If he be required to deliver his opinions respecting any point, it ought to be done openly and candidly, even from the most trifling to the most important consideration, connected with the preservation of his patient's health, or the removal of his disease. If it be urged, that it is neither customary, nor perhaps prudent, to explain many circumstances connected with his profession, then it may justly be suspected that there is a radical error, not in the profession, but in the head of him who pretends to practise it. By such persons, when opinions are extorted from them, they are couched in those dark technical terms, said to be proper to the profession; and medicines are given, but upon the same principle, neither their nature, nor the effects expected from them, can be explained. Thus, he who has courage to be used in this way, has his common sense daily in-

sulted, and his health at last irrecoverably destroyed, and all this under that affected grimace and pomposity of manners, which, from experience, have been too long found to be more useful to themselves than beneficial to their employers. Thus, with their multitudes of bottles, pills and powders, for reducing too vigorous an action of the system, and the numerous list of tonics almost immediately after, to brace the system, they form a sort of laboratory of the human stomach, and the persecuted patient is thus alternately braced and reduced, till he is either tired of such unmeaning and inexplicable proceedings, or falls under the effect of the disease, or, what is still more probable, under the effect of the drugs given to relieve it ; possibly, indeed, by the miraculous strength of his constitution, a patient may sometimes withstand these formidable assaults.

There is, perhaps, no profession in which innovations are with greater difficulty made, than in the medical one. The grossest faults, and the most erroneous doctrines, often acquire a degree of respectability from their antiquity alone, and people involuntarily reverence opinions which have nothing else to recommend them than their antiquity. It is owing to this, that improvements in our profession are at all times

slow, and even many have been laid aside as entirely useless, without their merits having undergone that fair and candid examination, which, from various circumstances, we have reason to believe them to possess. The aversion which physicians have always had to step aside from the beaten path of practice, has indeed been long notorious, in consequence of which, the effects of almost all our valuable medicines are either partially known, or not known at all. The late attempt to introduce into practice the Pneumatic medicines, has not met with that great approbation to which it is evidently entitled, which is too often the fate of rational proposals, or attempts to improve the practical part of our profession, while any thing of a mysterious or unaccountable nature, meets with a host of supporters. Enough has certainly been ascertained, respecting the powers of these medicines, to convince any one, who is not bound in the fetters of prejudice, that among them, there are some, which, under proper management, may prove very important additions to our *Materia Medica*.

Dr Beddoes and others, upon this subject, have advanced many original and ingenious opinions, and are assuredly entitled to the thanks and esteem of every man who wishes

well to the progress of our art. Indeed, I am of opinion, that, at some future period, it will be found that from the properly regulated use of pneumatic medicines, our principal advantages in practice will be derived.

The mechanical and chemical philosophers, I may observe, have in their turn contended, that the cure of diseases should be conducted in conformity with the particular opinions of their respective sects. Like almost every doctrine, each of these have been pursued with a vigour by their adherents and supporters, which, from want of due consideration, even of their own principle, did not answer either their own expectation, or that of the world in general. Instead, therefore, of that perseverance and steadiness which is necessary for the developement of every important truth, hasty opinions were formed, often by guess, in support of it, or alluring fabrications which never could be realized but in the heated imagination of their original proposer. Thus, both these principles have been supported, perhaps, in many points unjustly, and many valuable truths, individually connected with them, have been entirely overlooked, when matters have engaged the attention, which, comparatively speaking, were of very little

moment. It is this pursuit of opinion, in preference to facts, that has been the greatest obstruction to improvement in medical practice.

The prosecution of experiments, when they seem conducted on rational principles, with a candid detail of their results, is the surest way by which we can arrive at truth in any science. The cruelty and unmeaning butchery, however, which is daily followed under the name of *experiments*, when perhaps, the performer can scarcely tell you the object he has in view, or how it can be applied to any useful purpose, can only obtain for him that abhorrence which his senseless cruelty so justly merits.

Those modes also of ascertaining the comparative medical properties of substances, recommended in the works of many of our best medical writers, by exposing to their influence pieces of animal flesh in different states of preservation, seem to me of a very doubtful nature. It is not by exposure of a wounded surface, even in a living state, to the action of these medicines, that we are to know its effects when taken into the animal body ; far less when such animal substance is separated, and thus divested of that vital principle which regulates the action of every

substance which may be applied to the living body.

In directing our attention to air sensibly infected by putrid exhalations, we must know, that it cannot lose one of these properties without becoming a new body, either by decomposition or new combination, and thus to destroy the danger :—I say, to destroy, not to mask ; two things which it is unhappily customary to confound. But they are very different in the estimation of the chemist, who sees, in odour disguised, only a confused mixture, of which the parts have a constant tendency to separation ; whereas, the destruction of the odour is the result of a combination by which the odorous body is decomposed, or combined with a base which changes its properties ; thus, in neutral salts, the most corrosive agent remains inert, until it be disengaged by new affinities.

We know, by fatal experience, that both animal and vegetable matters, when in a state of putrefaction, are the sources of the most formidable maladies, from the mildest fever to the plague itself. Sir J. Pringle has furnished us with an instance of a prison or an hospital fever caused by the infection of a gangrened member. Venice experienced a terrible fever, occa-

sioned by a quantity of putrid fish ; and the town of Delft in Holland suffered a similar evil from putrescent cabbage and other vegetables. Other examples might be quoted of countries almost depopulated by similar causes.

When we have ascertained the air to be in a vitiated state, and thereby rendered capable of propagating disease, our first object ought to be, to remove the cause of such vitiation ; and afterward, or at the same time, to investigate the most effectual remedy, and to bring it in contact with those corpuscles which propagate the contagion, for the purpose of destroying in the air, and wherever it may deposit itself, the composition which exercises this destructive property.

Modes of
Preventing
or Destroy-
ing Con-
tagion, In-
fection, &c.

What, says the chemical physician, is that which constitutes the curative virtue, that physical action of medicines, which physicians have with reason called occult, since they could only judge of it from experiment and observation, unless it be a change of combinations produced by affinities ? in the very extensive scale of medical agents,

from the slight alterative to the most powerful corrosive, this circumstance alone denotes all the degrees, and explains all the differences: proofs of this have been placed in the clearest light by chemists of the first abilities in different countries.

These notions are evidently incorrect, because vital bodies are by no means influenced like inanimate substances.

It appears, from a variety of authorities of the utmost respectability, that seclusion from places where epidemical diseases rage, provided those places are well ventilated, almost certainly prevents the disease from affecting them, such as colleges, &c. but if this seclusion is made in an ill-aired part of a town, or in short in a situation in any way confined, it produces a directly opposite effect.

Sea air affords a certain asylum in all hot and unhealthy countries; and, in the most malignant diseases, the immediate removal of the patient to a purer air is often the only method to preserve life. Indeed, the wonderful effect that this has, when properly applied, in every stage of disease, is amazing.

Supplies of the purest air, are, however, insufficient to destroy contagion; of which I could produce several undeniable proofs from the best authority. It is necessary, therefore, to correct, by some active means,

the noxious effluvia which arise from diseased bodies, afflicted perhaps with mortifications, carious bones, malignant ulcers, or putrid fevers.

It is commonly said, that fire is a universal purifier, and this familiar observation is true in one sense: the substances which have undergone its action, preserve neither the same form, nor the same properties; but ideas, either inaccurate, or absolutely false, are often attached to it.

It is, on the other hand supposed, that combustion is equivalent to destruction, while in effect, it only changes pre-existing combinations by new ones, and sometimes it forms compound substances of those that are simple, which, in reality, is rather to produce than to destroy.

Pure oxygen air is confined to the purpose of exciting the powers of suspended animation, and it is, therefore, to be administered to children born apparently dead or overlaid; to persons suffocated by drowning, by steam of charcoal, by foul air, &c., whenever the circumstances of the case, may indicate the possibility of recovery.

Dr Crawford. however, is of opinion, " that the fluids which destroy fetid odours most speedily, are those which are acknowledged to contain the greater portion of

oxygen, and that it is therefore extremely probable that this change depends on the union of the oxygen with animal hepatic gas, or some one of its constituent parts." Opinions and enquiries of this nature are of the utmost importance to the preservation of life, for, as respiration is one of the principal functions upon which it depends, it is probable that, by ascertaining the changes produced in the air, expired in different states of the body, after its having been placed in different relations, with respect to diet and drink, we may be led to a more rational employment of our internal, as well as our external remedies.

Very ingenious experiments have been instituted, to prove the efficacy of fixed air thrown into the blood, in preserving animals from putrefaction. These, however, seem to me still more doubtful than the experiments of many ingenious authors, to prove the effects of diseases, thought to be of a putrefactive nature, by exposing pieces of dead animal matter to the influence of those gases disengaged during the process of putrefaction. Were the conclusions drawn from these experiments just, every substance containing a given quantity of fixed air, would be equally efficacious in removing putrid diseases: hence peas, apples, cabbages

ges, turnips, ought all to be preferable to bark.

We have reason, therefore, to suspect that there are other principles in bodies besides their fixed air, which contribute, perhaps, more than the air itself, to render them antiseptic. This supposition seems to be supported by some of the experiments of Sir J. Pringle, and particularly by that one where two grains of camphor, proved a much stronger antiseptic than sixty grains of sea salt, and camphor, according to Dr Hales, contains almost no fixed air.

Resinous substances, even those which give out a volatile acid on distillation, in whatever manner they are employed, only mask, for a moment, the contagious odour, without purifying the air, and without destroying the contagious corpuscles.

No advantage can be expected from throwing different substances on live coals. Either pure or aromatic vinegar thus employed, is rather burnt than evaporated. In such cases, the vinegar is in a great measure destroyed, and the air retains only the impression of the gases resulting from its combustion. Nitric acid itself gives only unrespirable gases, after having served, by its oxygen, to augment the intensity of the fire. Similar effects result from the employment of gun-

powder, the explosion of which merely exerts a mechanical action on the air.

Dr Priestly found, that all kinds of noxious airs were restored by continued agitation in a trough of water, the noxious effluvia being imbibed by the water. Thus, warm or cold water employed in ablution, may tend to carry off the contagious matters, and disperse them, so as sensibly to diminish their fætor, in the same manner that it weakens any solution by diluting it; but what it leaves, as well as what it carries away, is not decomposed, and has only changed its vehicle.

Various other methods have been attempted and proposed by ingenious and industrious men for the destruction of those gases whose presence vitiated the atmosphere; and by the inspiration of which, or by otherwise applying them to the body, life was, according to their particular nature, endangered.

By passing a current of air continually through the sick room, the pestilential air may be swept away. By removing the bed-clothes and linen of the patient, the matter of contagion accumulated in them may also be removed. But this cannot be done every moment; yet the matter of contagion is formed every moment. Here, then, is the

essential agency of mineral acid gases. They do meet the matter of contagion every moment, and destroy it, as soon as it is formed.

Vinegar has long been conceived to possess qualities of this nature, and we have, in confirmation of its use, the testimony of Dr Crawford and others, who assure us, that the peculiar smell of animal hepatic gas is destroyed by agitation with vinegar. The use of vinegar was the grand secret by which the Romans preserved their armies; for as soon as that was wanting among them, they became as much subject to diseases, as we are at present*.

The acetic acid or radical vinegar, is expensive, but has a rapid and intense action on infected substances, and ought, though perhaps not extensively, to be used by those who are obliged to expose themselves to noxious emanations.

When the gaseous oxygenants are employed in sufficient quantity, and in a state of expansion, capable of filling a large space, they correct infected air, and destroy the principle of contagion. Should some noxious particles escape its chemical action;

* Saxe's Reveries.

should the means necessary to perform this process be wanting ; or, in short, should the danger not be so alarming as to enjoin those extraordinary precautions, it may, in such cases, be used as a preservative.

It is unfortunate, that in the investigation of the powers of any remedy, external, as well as internal, so many circumstances should exist to give a wrong direction to the mind. The anxiety of some persons, the ignorance of others, the desire of fame, the love of interest, and the fear of dangerous innovations, have alternately operated against or in favour of the administration of our best remedies for the alleviation of disorders incident to the human body. In the conflict of such opposite powers, it is difficult to separate truth from exaggeration and error. The activity of many of the airs, for instance, has been urged against their use. That some of them possess powerful and active properties, can, however, be no objection to their use ; for the same may be said of opium, and certain preparations of antimony and mercury, which are daily prescribed, and which only do mischief in the hands of unqualified persons. These airs, like all other medicines, may be overdosed ; but practitioners who are acquainted with their effects, will take care that they are

not too freely, or too frequently, applied: With such precautions, they may be pronounced to be as safe as most other medicines.

In but few instances; however, will the application of these airs do any more than remove the effect produced by them. We therefore must search for other remedies more effectual in their nature which will, in addition to them, destroy the sources of these diseases, for contagion being constantly generated, requires to be as constantly destroyed; rendering the perpetual process of destruction necessary, though perhaps ineffectual, unless our attention be directed to the original sources of them.

The mineral acids possess the power of destroying contagious miasmata, and the putrid smell which indicates their presence. These acids may be converted into a state of vapour, so as to purify a mass of infected air; in short, with a few simple precautions, they may be diffused in places shut up, and where people are present, without producing the slightest inconvenience.

The three mineral acids are in general regarded as the most powerful instruments in destroying of every organic composition.

The sulphuric acid, diffused in three parts of water, instantly destroys all odour in the mass of air with which it comes into contact; and there can be no doubt that the sulphureous acid itself, employed in a liquid state, would produce the same effect.

The sulphuric acid cannot, however, on account of its fixity, serve to purify the air; the sulphureous acid has scarcely any effect in that way; and the nitrous acid acts only on the respirable portion of the atmosphere, while the vapours exhaled from it are highly suffocating.

The nitric acid disengaged, according to the process of Dr Smith, most certainly destroys putrid miasmata, but it cannot be diffused to a great distance, is readily condensed, and only acts as an oxygenant by giving out nitrous gas; a frequent repetition of the process is likewise necessary to insure its success, even in a small apartment.

The muriatic acid exists wholly in a state of gas, the volatility of which is augmented in proportion to the quantity of oxygen united with it; whilst, on the contrary, the nitric acid loses its smell, and becomes more fixed, even in a high temperature, in proportion as its acidifiable base approaches toward a state of complete saturation.

The muriatic acid presents the greatest advantages in this respect from its prodigious expansibility, as it is of essential consequence to bring it into immediate contact with the substances upon which we wish to produce a change. It may be performed with less risk of fire than that of Dr Smith's, since no greater heat is necessary than what is produced from the mixture of the ingredients. This process, therefore, is simple, and easy of execution, even to the individuals least accustomed to such operations. It requires neither extraordinary apparatus, nor fire, not even the heat of a sand bath, a consideration of the greatest importance, especially when employed on ship-board.

In fumigating with this acid, all the apparatus necessary, is nearly equal parts of common salt and sulphuric acid, (oil of vitriol of commerce,) and a large glass goblet. If the room be small, the goblet may be placed about the middle of it, on the ground or on a table. The acid and salt must be gradually added to each other, whenever the vapours produced by their mixture cease to ascend. If the apartment be small, it will be unnecessary to move the goblet from place to place; but if, on the contrary, it be large, it will be proper to produce vapours in different parts of it. Thus, the vapours

coming into contact with the foetid or malignant miasmata, will destroy it without producing any inconvenience to the persons present. The doors and windows of the fumigated apartments should then be closely shut for several hours.

The muriatic acid was first recommended and used by Dr James Johnston of Worcester, in 1758, but it was Mr Morveau who first shewed that it neutralises miasmata, and by that means destroys their bad effects.

By adding, during the operation, a small quantity of the oxyd of manganese, the oxygenated muriatic acid is procured, which may be regarded as the most certain preservative from contagion, and which is still further recommended by the ease with which it may be applied in all cases.

The following proportions have been found to approach as near as possible to the point of saturation.

	Oz.	Dr.	Gr.
Common salt.	3	2	10
Black oxyd of manganese. . . .	0	5	17
Water.	1	2	33
Sulphuric acid.	1	7	50

The salt and manganese must be triturated together in a glass or stone-ware vessel ;

the water then added to them, and afterward the sulphuric acid, all at once, if the process is carried on in uninhabited chambers, but at different times, if in wards filled with sick.

With respect to acids in general, they may be serviceable in removing infection, either because they destroy the combination, as is probably done by the oxygenated muriatic acid, and perhaps by the nitric and sulphureous acids, or by simply combining with the putrid substance. It is thus that the muriatic acid appears to act; but it must not be concluded from this, that the substance is an alkali, for the alkalies have also the property of combining with it, and, at least, lessening its effects. Antiseptics prevent them, by producing a combination with animal substances, which offers more resistance to the causes of decomposition.

The oxygenated muriatic gas, in a state of vapour, carried by respiration into the nasal and pulmonary cavities, dispersed in the atmosphere we breathe, or introduced by deglutition into the stomach, acting, in a word, upon all the surface of the body, is an unaccustomed stimulus, which augments the action of the organs, and excites their sensibility.

Applica-
tion of
these
modes to
Plague, and
Epidemic
diseases in
general.

I am confidently of opinion, that, were the legislature to cause such means to be adopted as are proper, and only such as ought to exist in every country, we should, in no great length of time, as completely eradicate the causes of the different kinds of contagious disease which prevail in this country, as the labours of Dr Jenner, and others, have eradicated that of the small-pox.

The nature, as well as the cause, of most of these complaints, is now pretty well known. That their cause consists in some particular quality of the atmosphere, is generally allowed; it therefore cannot admit of a doubt where the remedy ought to be applied.

This, however, is too often overlooked, and the remedies for these diseases are immediately, and too often, when too late, ineffectually applied directly to the patient, instead of being directed to the removal of the causes of his complaint.

The propriety, therefore, is evident of attempting to decompose the putrid effluvia with which the atmosphere may be impregnated, and thus render it again fit for the

purposes of respiration, and all those advantages which we derive from it in a pure state in the economy of human life.

A general rule, during the epidemical season, either before or after the patient has been affected by it, is to remove him as soon as possible to a more wholesome atmosphere. To wait in expectation of relief from some accidental occurrence, which may never arrive, is, in every kind of disease, extremely imprudent.

“ While wilful you, and fatally secure,
Expect to-morrow's more auspicious sun,
The growing pest, whose infancy was weak
And easy vanquish'd, with triumphant sway
O'erpowers your life. For want of timely care
Millions have died of medicable wounds.”

During the epidemical season, I believe it is a very good general rule to use cold sea-bathing, except where very urgent reasons forbid its use.

Where infectious diseases actually do prevail, the door or window of the house, and the curtains, except to prevent the light from proving disagreeable to the patient's eyes, should be almost always open. Medical attendants and visitors should not go into an infectious chamber with an empty stomach, should avoid the patient's breath,

exhalations from his body, &c. ; should likewise be careful not to take a full inspiration while in the apartment, and, immediately on leaving it, ought to spit and wash their mouths.

The plague is a very widely spreading disease. The greatest mortality that it has occasioned in later ages, was about the middle of the fourteenth century, when it seized country after country for five years together. In the year 1346, it raged in Egypt, Turkey, Greece, Syria, and the East Indies; in 1347, some ships from the Levant carried it to Sicily, Pisa, Genoa, &c ; in 1348, it got into Savoy, Provence, Dauphiny, Catalonia, and Castile, &c ; in 1349 it seized England, Scotland, Ireland, and Flanders; and the next year, Germany, Hungary, and Denmark : and in all places where it came, it made such destruction, that it is said to have depopulated the earth of more than half its inhabitants.

That some kinds of weather may be more favourable than others, for the expurgation of infected goods, is very probable ; but it remains to be determined by experience, whether, in a pestilential constitution of the air, the same goods require much longer time than usual, to be divested of their contagious property ?

When the south-east wind blows, or the weather is moist and rainy, it is observed that the infection in goods, though they be exposed to the air, is rather fomented than dissipated, so that the complete quarantine sometimes may be performed, and the goods remain not purified. An inconvenience may also be apprehended in the winter, which does not usually happen in the summer, namely, that in cold weather, or when the north wind blows, the pestilential miasmata are concentrated, and lurk in the clothes and other goods, till set loose by the return of heat, when they cause terrible devastation. But, whatever the weather may be, if the fumigation be properly applied to the goods, and moreover, the change of apparel, and washing with vinegar, be properly managed with respect to persons, the quarantine will be a sure method of ascertaining whether the person has brought the infection along with him, and also of purifying him, if infected.

Great debility marks this disease throughout. It commences with febrile symptoms, but they are not of long continuance. Headach, giddiness and delirium, often appear very early, and are worst during the febrile exacerbations; the last of these often alternates with coma, which, when it ap-

pears early, is a bad symptom. Loss of speech, or faltering or tremor of the tongue, then exist, and also often continue for months after the patient's recovery. The sense of hearing, too, is impaired. The eyes have an expression of muddiness, blended with lustre, but during the febrile exacerbation they become red, which gives a wildness to the looks; in the remissions they assume their former muddy appearance. When this disappears, it is a favourable symptom. The tongue often retains its healthy appearance, and sometimes it becomes white and moist; at other times, parched with a yellow streak on each side. In general, the pulse is low, quick and equal, sometimes fluttering or intermittent. In bad cases, it is always low, except during the exacerbations, when it becomes full and strong, till at length, even during that period, it becomes only quicker and extremely feeble. Except in the exacerbations, and advanced stages of the disease, respiration is seldom disordered. Oppression is felt about the præcordia, which, when it appears early, is a bad symptom, the patient also complains of pain and burning heat about his heart. Great debility, with a disturbance of the vital functions throughout, denote the nature of this disease. Fainting and syn-

cope, particularly when the patient is erect, and trembling of the hands, startings and convulsive motions of the limbs, are not uncommon. Where the skin is constantly dry, the danger is great; but frequent and gentle perspiration, seem to moderate the disease. Vomiting is a dangerous symptom, at any period of the disease, but nausea is of more frequent occurrence. Looseness is likewise a dangerous symptom, but costiveness seems to produce no bad effect. At last, buboes and carbuncles frequently appear over the body, with hemorrhagies and colliquative diarrhæa.

The plague, in common with other epidemic distempers, has its several stages. These stages, however, vary in different years. From the accounts given by authors on the same subject, who have lived at very distant periods from each other, it is found that the plague gradually disappears, becoming milder in its symptoms, and assuming the more gentle form of fever.

In its mode of attack, however, it seems to possess peculiarities not common to many of our febrile complaints. The plague, for instance, begins at some point, and gradually spreads itself; but, in many other of our febrile complaints, numbers of the inha-

bitants in distant streets are at once seized by them.

It has not been determined whether this be communicated by actual contact, or through the medium of the air. We find good authorities for both sides of the question; but the names of Prosper Alpinus, Forestus, Schreiber, Pringle, Smith, &c., who are of the last opinion, would probably make one hesitating upon the subject, incline toward it.

Various absurd, and many very judicious opinions, have been formed by authors respecting this disease and its cure. Fires seem to have been at one time the principal remedy for it. In the most favourable circumstances, the use of these seems to have been doubtful, and, in many instances they were evidently hurtful. Some physicians, as a subordinate consideration, recommended that sweet-scented herbs and flowers, together with ointments of the finest flavour should be thrown into the fires; but if any advantages resulted from this, it was from these last substances, and not from the fires themselves.

Paré tells us, that "Alexander Benedictus, a Scythian physician, made the plague arising from infection of the air to cease, by causing all the dogs, cats, and such like

beasts which were in the city, to be killed, and their carcases to be cast up and down the streets, so that, by the coming of this new putrid vapour, as a stranger, the former pestiferous infection, as an old guest, was put out of its lodgings, and so the plague ceased. For poisons have not only an antipathy with their antidotes, but also with some other poisons." These, however, with universal fires, and firing of great guns, seem to me very useless in destroying contagion. The fires, in particular, may probably have a very opposite effect; and, I have no doubt that this practice has been a great cause of virulence in plague, when it otherwise might have become mild, and even ceased altogether for that period at least. For it is very evident, that they must have produced a consumption and a destruction of that principle in the air, which is equally the food of animal life and of fire.

During a plague at Marseilles, this practice was so obstinately persevered in, that the atmosphere became obscured with a thick smoke, which encreased the natural heat of the season and climate, and appeared to give additional activity to the contagion. Cells, moreover, contaminated with the plague, have not in the slightest degree been

purified, after several trusses of straw being burned in them.

The explosion of gun-powder displaces, but does not destroy, the odorous particles, by putting in motion the air which dissolves them. It may, in a certain degree, expel them from a confined space; but, in the open air, it can only weaken their impression, by diluting them in a greater quantity of the aerial fluid.

The custom of shutting up houses in which the plague existed, must have been attended with most dreadful consequences; indeed this seems to be the opinion of all modern authors.

The numerous improvements which have for some time past taken place in chemistry, have, while they were accelerating the advancement of almost every art and science, been applied, as already mentioned, to the destruction of contagious miasmata. Various substances have been employed, some with less, and some with greater success.

It has been found, that corrupted air preserves its smell, even after being agitated with lime water, and before the latter is deprived of its active qualities. From this fact, we may learn how to estimate the practice, recommended in the most recent works,

even in cases of plague, of new white-washing with lime the walls of infected places.

The plague of London, in 1636, began with great violence ; but leave being given by the King's authority for people to quit their houses, it was observed, that not one in twenty of the healthy persons who removed, fell sick, nor one in ten of the sick, died. When this disease was last in England, upon its first entrance into Poole in Dorsetshire, the magistrates immediately suppressed it, by removing the sick into pest houses without the town.

When the sick families are gone, all the goods of the houses, in which they were, should be buried deep under ground. This I prefer to burning them ; because, especially in a close place, some infectious particles may possibly be dispersed by the smoke through the neighbourhood.

Whatever in any way induces debility, must cautiously be guarded against during the prevalence of the Plague. To break in upon any long established custom, is bad in any disease of an epidemic or pestilential nature, principally, perhaps, as it induces a very considerable degree of debility. For the same reason, tranquillity of mind must be as much as possible preserved, as there does not exist any common cause more apt

to induce susceptibility of the effects of contagion, than the temporary debility occasioned by an irregularity of the passions.

While attention to personal cleanliness is our duty at all times, it is of the greatest importance in preserving health during the prevalence of pestilential diseases; but if this be neglected, and to the accumulating personal filth be added, the unlimited use of eating, and of drinking spirits, wines, &c. the very worst effects are to be expected. During these diseases, too, it would be a proper step in those exposed to their influence, to cover the nostrils with a piece of linen moistened in vinegar.

In addition to cleanliness, the use of vegetables is perhaps among the best preservatives, provided, at the same time, attention is paid to the other particulars which I have mentioned.

While the yellow fever raged in Philadelphia with the greatest fury, the prisoners in jail were scarcely affected by it. This was, for the most part, ascribed to the frequent use of the cold bath, constant employment, vegetables for diet, vegetation flourishing in the court-yard, and a stream of water constantly running near the spot; and this happened while the city of Philadelphia was uninterruptedly parched with heat; and many

of the above precautions were omitted. With respect to the use of vegetables, and their essential consequence in the prevention of this disease, Sir J. Pringle imagines the frequent use of them, in our common diet, to be one grand cause why the plague, and other putrid diseases, are now so much less common in Europe than they were formerly.

Among the list of preservatives from the infection of the plague, issues have been recommended, as it has been observed, that those who had ulcers in their legs or otherwise, escaped it.

SECT. II.—*Police for, and Modes of Cure of Individual Diseases.*

During inflammatory complaints, in habits not remarkably reduced, the most sparing diet should be used; among which fruits of various kinds, and prepared in different ways, may be included. For drink, the juice of ripe fruit, barley-water, or toast and water, are highly proper.

Cure of
Inflam-
mation.

When the hardness of the pulse has abated, this regimen may be relaxed, and more

nourishing materials, though still with the utmost caution, may be indulged in.

While inflammation is most common in the robust, we can treat it with freedom. In the delicate, however, it is more dangerous, and it runs its progress most rapidly, while we are prevented from pushing our remedies, or from repeating them.

Cutaneous inflammation, such as pimples on the face, though not dangerous, are often extremely disagreeable, and may often be removed by a weak solution of corrosive sublimate in alcohol; but when they exist, which often happens in both sexes, from some constitutional affection, external applications have no permanent effect in removing them, and are often attended with dangerous consequences. They, however, may almost always be removed by other means.

In every case of inflammation our first object is, if possible, to terminate it by resolution. When this fails, and the affection is external, our next object is to terminate it by suppuration.

The first consideration in the cure of inflammation is, where it can be detected, to remove its cause, which in many instances is alone sufficient to accomplish a complete cure.

The medicines administered for the removal of inflammatory affections, are local or general, according as they are immediately applied to the affected part, or to the system.

If heat has been applied so as to induce inflammation, we must remove the superabundant quantity of heat, but must not apply cold.

The application of cold in the form of solution of acet. plumbi, or otherwise, is however, in general, serviceable in those local inflammations which arise from a different cause. Acids, alcohol, and neutral salts, when dissolved, have also beneficial effects.

In the cure of inflammation by constitutional means, we find it necessary not only to reduce the action of the inflamed part, but also that of the system in general, so as often to be attended with general weakness.

Inflammation may be most easily cured by attending to the very first symptoms, and employing depleting means according to their severity.

Purging to excess, though more immediately depressing than bleeding, does not produce such lasting effect on the general system.

Inflammation is always attended with hardness of the pulse, which is most effec-

tually taken off by the relaxing power of blood-letting. Therefore topical or general bleeding must be employed according to the part affected, and the strength of the patient.

Bleeding, either topically or generally, is the most commonly useful practice in inflammation, but as the effects of general bleeding are very extensive, it ought at all times to be employed with judgment, as, indiscriminately used, great debility and irritability of the system is induced. In wet, foggy, or impure states of the air, such as happens in crowded places, a repetition of bleeding in pneumonic cases is inadmissible. On the contrary, during a free cold or dry air, this plan of treatment can be used with much greater freedom. Therefore, in treating pneumonia, for instance, we ought to attend, among other things, to the situation, &c. in which the patient may be placed.

If, in inflammatory complaints, the urine is high coloured, and not very profuse, bleeding is generally proper; but if the urine be pale, and in large quantity, even independently of other indications, bleeding must be used with caution.

It is in general during the existence of a *small* and *weak* pulse, that the patient re-

quires cordials ; but when the pulse is *small* and *hard*, we may abstract blood ; thus, we render the pulse slower, softer, and fuller.

In many cases, when we are puzzled with respect to the propriety of bleeding, in our present state of knowledge, we are often under the necessity of using it cautiously, and, judging from the state of the blood, and its effects on the system, whether we should continue this practice.

Where there is a strong pulse, with a firm coagulum of blood when drawn, a repetition of bleeding may be in general necessary ; but where the pulse is small, frequent, and hard, bleeding should generally be used with caution.

If the coagulum of blood has on its surface a thick yellow buff, and is considerably cupped, a repetition of bleeding may, in general, be used with less caution than when the blood is weak in its coagulating powers, and lies flat in the dish ; or, if strong at first, and, after repeated bleeding, it becomes weak and loose in its texture, we ought not to bleed further, as then the inflammatory action will cease.

The quantity of blood abstracted, as well as the frequency of our recourse to this remedy, must be regulated by the symp-

toms, as well as to the general effect that this operation has on the system.

Although, in the treatment of inflammation, we are in general to be regulated by the state of the pulse, yet it is not always to be depended on, as, in some states of inflammation, a small pulse is often rendered fuller by repeated bleedings.

When, from various circumstances, we find it necessary to bleed sparingly, we ought to bleed as near the affected part as possible, so that the greatest effect may be produced by the least loss of blood.

Warm emollient poultices accelerate the suppurative process. These may be made of wheat bread boiled in water, in preference to milk, which last is apt to ferment and become disagreeable.

During the process of suppuration, the fever occasioned by it may in general be kept moderate by rest, dilution, and gentle laxatives.

When gangrene originates from loss of tone of the parts, or of the system in general, stimulating medicines, such as bark, &c. ought to be used; but if the inflammation be violent, such medicines can only do harm.

In inflammatory complaints in general, occurring in constitutions not broken down by

previous disease; irregularity in living, &c., the employment of bleeding, blistering, saline purgatives, more or less extensively employed, according to the urgency of the symptoms, very frequently effect a cure. In those, however, debilitated by age, enfeebled by vitious habits, or previous disease, previous bleeding must almost always be avoided, as it is seldom, if ever, serviceable, and often highly injurious. Under these circumstances, dropsy, in one or other, or almost every form, is the consequence; and when thus once induced, it can, I may venture to say, never be removed. Alleviation may sometimes be obtained, but this is always deceitful, and of very short duration.

The physician therefore cannot be too careful in discriminating, with great caution, the habit of body, previous manner of living, and other circumstances of patients who may be affected with inflammatory complaints, before employing venesection, even although several symptoms indicate the propriety of such practice. If the habit of body have been previously much injured, greater benefit, for the most part, will be obtained by blistering than by bleeding, or any similar method which may greatly reduce the general system.

Although general evacuations are useful, and often absolutely necessary, in inflammatory affections, yet there are species of inflammation, such as the venereal, erysipelatous, &c. in which evacuations are ineffectual.

When inflammatory complaints seize those patients who have suffered from recent febrile complaints, blood-letting, which but for that circumstance, seemed indispensibly necessary, must not be employed. Blistering the breast, with gentle doses of saline purgatives is, in such cases, the only practice from which benefit is obtained.

Cure of Catarrh. In our variable climate, it is a mistaken notion, that strict confinement in heated apartments, should be observed as a prophylactic. Persons who follow this plan, may escape the disease as long as their imprisonment is continued; but no sooner do they venture out of doors, than they are affected by it. They who go out in the coldest days, are much less liable to the disease; and in general, such persons as are very subject to catarrh, will find it more to their advan-

vantage to be careful not to go suddenly from a warm room into cold air ; to avoid wet feet, and showers of rain, than to confine themselves, for the most part, within doors.

In slight cases of catarrh, it is in general sufficient to avoid cold ; to abstain from animal food and spiritous liquors ; for some days to lie in bed ; to take warm diluent drink, to promote perspiration, and to return very gradually to the use of the free air.

In this disease, various diaphoretic substances have been employed, and Dover's powder among the rest ; but however proper it may be to keep up a free circulation on the surface of the body, and a softness of the skin, yet people cured by powerful diaphoretics seem peculiarly predisposed to a return of catarrh, from very slight exposure to cold ; perhaps some antimonial wine, with an opiate at bed time, or a paragoric draught, will, in most cases, be found to keep the skin sufficiently moist, and will have the advantage of moderating the cough at the same time.

Venisection is very seldom necessary in this disease, but when the symptoms are violent, this evacuation or blistering, with strict antiphlogistic regimen, must be had recourse to. The blood generally exhibits

the buffy coat. When pneumonic symptoms occur, our chief dependence must be upon the lancet, and with it blisters and cathartics may be employed. A severe catarrh will easily bear these evacuations; and even slight pneumonia will scarcely do without them. Let the degree of evacuation be always proportioned to the symptoms, and strength of the patient.

Oily and saccharine matters are serviceable; by besmearing the fauces, they abate that tickling and irritation about the glottis, which excites frequent coughing, without expectoration. For this purpose also, in some cases, an addition of opium to these matters, as in the troch. Glycirrhiz: cum opio, may be employed with much advantage, and if the extract of liquorice, mucilage of g. arabic, &c., do not produce an abatement of the cough, opium may be employed advantageously, even during the most inflammatory state of the disease; care being taken to keep the bowels lax at the same time. Opium abates the irritation, and makes the cough less frequent, and this diminishes the power of one cause of aggravation of the disease; for the violent cough, when it is produced by irritation from inflammation about the glottis, rather than from the mechanical stimulus of the mucus

there, certainly tends to increase the violence of the disease.

Unless when the violence of the inflammation is such as to indicate blood-letting, or during the chronic state of the complaint, when the continuance of it depends on an increased quantity of mucus into the bronchiæ, and perhaps in the lungs, which, by impeding respiration, or mechanically irritating these parts, produces cough; when this is not the case I have employed the following pills with decided success; G. Myrrh, ʒi. G. Ammon. ʒss. P. R. Scill gr. x. Opii gr. vi. syr. simp. Q. S. f. Massa in pil gr. vi. dividenda.

After continuing their use for a considerable length of time, which is often necessary, I have gradually, from three each day, increased the dose to six, seven, or even more, which in most instances produced the desired effect. I have repeatedly found these pills produce a surprising effect in promoting expectoration, and entirely removing the disease.

Inhaling the steams of vinegar and warm water morning and evening, from a tea or coffee pot, or from a vessel, to be found in all the tin shops, expressly fitted for that purpose, is extremely proper during the whole course of this complaint.

Cure for
Pneumonia

In this disease, the antiphlogistic treatment, in all its forms, must be attended to; few bed-clothes should be used; and the bed-chamber should not exceed 60° of Fahrenheit's thermometer.

When pneumonia seizes the patient, if the constitution be not otherwise broken down by disease, bleeding or blistering, with saline purgatives, almost invariably effect a cure.

The remedy chiefly to be depended on is bleeding at the arm, in extent suited to the strength of the patient and violence of the disease. It may in general be continued till syncope be produced. This, if necessary, may be repeated in a few hours, and even till the symptoms abate. A pound is a good bleeding; but sometimes four or five pounds may be taken in a few days. When general bleeding cannot be continued, cupping and scarifying as near the affected part as possible may be used.

Although expectoration takes place early, if the symptoms do not abate with it, bleeding must not be delayed in hopes of this moderating the symptoms.

In severe cases, on the first, and even on the second cupful of blood, there is sometimes no buffy coat, and yet on the third, this appearance is very profuse; we ought not therefore to be intimidated, if other symptoms indicate the necessity of the practice. The quantity of blood to be drawn in pneumonia, must be regulated by the cough, pain, and difficulty of breathing.

A thin bluish film on the blood, with a kind of soft greenish jelly immediately underneath, is a mark that the system will not bear large quantities of blood to be drawn off.

When, after repeated bleedings, the crassamentum, although it becomes small, is solid, almost like a piece of flesh, the patient is in great danger.

After the free use of the lancet in pneumonia, opiates may, in most instances, be administered with advantage. After a full bleeding, also, a blister ought to be applied as near the pained part as possible, and a repetition of the blister is more effectual, than keeping one open for a great length of time.

Although bleeding, in general, is quite sufficient for the removal of pneumonic inflammation, it is also necessary in order to

insure complete success, to prevent, for some time, the use of heating regimen, medicines, and hot air. Violent motion of the body, too, or agitation of the mind, tend greatly to prevent a complete cure.

Bleeding, however, in pneumonia, after the patient feels capable of spitting with some freedom, is apt to induce too great a degree of debility, and even to suppress the expectoration which moderate bleeding had induced.

In relapses of this complaint, bleeding may be used but with caution, as in general the patient is weaker than at first.

With those, however, who are debilitated by age, enfeebled by vitious habits, or broken down by disease, bleeding must almost always be avoided; it is seldom if ever serviceable, and often highly injurious. Dropsy, in one or other, or almost in every case, is the consequence of such treatment in the above habits, and when once induced in them, can, I may venture to say, never be removed. Alleviation may sometimes be obtained, but this is always deceitful, and of very short duration.

The medical attendant, therefore, cannot be too careful in discriminating, with great caution, the habit of body, previous manner

of living, &c. of patients affected with the above complaint, before employing venesection, even although several symptoms indicate the propriety of such practice. If the habit of body have been previously much injured, greater benefit, for the most part, will be obtained by blistering than by bleeding, or any similar method, which may greatly reduce the system.

In general, fat corpulent persons do not bear bleeding so well as the lean and muscular, nor are either the very young or the very old, the properest subjects for a repetition of this operation.

Mild diluent drinks, impregnated with vegetable acids, should be used freely throughout the complaint. Purgatives of an active kind are perhaps improper, but cooling laxatives, and emollient glysters, are highly beneficial. By a continuance, however, of laxative medicines, the patient's strength fails, and, by permitting constipation, the fever often attending pneumonia is much increased. Glysters are very safe in the last mentioned state.

The exhalation of the steams of vinegar and warm water, promotes expectoration, and so does antimonial medicines, given in nauseating doses.

If sweats in this disease be partial and clammy, with great difficulty of breathing, we ought not to encourage them.

In Peripneumony, the antiphlogistic treatment ought to be attended to, and external heat and cold are equally to be guarded against. Living, therefore, in a close ill aired room is exceedingly incommodious, and contributes much to retard the cure of peripneumony. The temperature of the patient's room, indeed, ought never to exceed from 50 to 60° of Fahrenheit's scale.

Purging ought to be used with the greatest caution in this disease, as it debilitates the patient too much. By the too free use of laxatives, particularly late in this disease, we often bring on a diarrhœa, during which the expectoration ceases, and the patient dies. Bleeding at the commencement of the disease, is almost always beneficial; we are sometimes even obliged to repeat this oftener than once. From ten to sixteen ounces of blood taken at once, is a good bleeding. Syncopy, induced by bleeding, or by the patient being put in an upright posture, is likewise beneficial; and we ought, as early as possible, to employ the antiphlogistic regimen. We ought, however, to relax our bleeding, as well as

the antiphlogistic regimen, when the disease occurs in very old people.

The pulse in peripneumony is, even from the beginning of the disease, oppressed, irregular, and sluggish, and the patient at the same time complains of weakness. This state often embarrasses the young physician, but when the disease has been of short duration, even in this state of the pulse, if there exists a fullness at the breast, with difficulty of breathing, &c., the bleeding will often have the effect of strengthening the pulse, and relieving every symptom of oppression. We ought, however, to proceed in the abstraction of blood, under such circumstances, with great caution. Blood-letting may then be used, provided the catarrhal and pneumonic symptoms are severe, but when these are slight, or effusion is to be feared, a repetition of blood-letting will do harm.

Bleeding is hurtful, when deferred till late in the disease, and even although the pulse, &c., should indicate the necessity of this practice in peripneumonic affections, when the tongue has become black, the breath offensive, with very high coloured, or blackish rank urine, with black spots on the body, and black, bloody, offensive stools, it is seldom, if ever, attended with success. The pulse immediately sinks and be-

comes intermitting; anxiety, fainting, and cold sweats succeed, and the patient scarcely ever recovers.

While pneumonia admits, in general, of large and often repeated bleeding, with diluting diet and relaxing medicines; in peripneumony, frequent or large bleeding weakens the patient, but does not remove the disease. Expectorants, which ought always to be used even in conjunction with bleeding, are, in such cases, of much greater service.

When peripneumony, however, has advanced very far, and when bleeding is not likely to produce good effects, blisters are then almost always ineffectual in relieving the symptoms, and they often do harm, by the very profuse bloody discharge they occasion, which often terminate in mortification.

Few cases of peripneumony terminate favourably, unless a free and copious expectoration be induced, which relieves the oppressed respiration in a few days. For this purpose, inhaling the steams of vinegar and water, is very useful. A dram of vinegar of squills should be taken twice a day, for a dose, when the disease has advanced, or pills composed of myrrh, g. ammoniac and squills, with a small proportion of opium. See page 161.

When, independent of all our applications in this disease, the expectoration becomes extremely hot and difficult, with a rattling of matter in the throat, the case may in general be considered hopeless.

We have much to learn in the cure of this disease, as, in general, we can do no more than mitigate some of the symptoms.

Cure of
Consump-
tion.

Many ingenious observations have been made respecting the cure of pulmonary consumption, yet I am sorry that, even viewing them in the most favourable light, the utmost extent of our knowledge on that subject is more calculated to the alleviation of suffering, than to the entire removal of the complaint. I have no doubt, however, that ingenious men may at length do much in preventing, if not in entirely curing this extensive destroyer of the human race. It is therefore more scientific to consider the difficulty attending the cure of phthisis to be in consequence of the imperfection of the medical art, than to the nature of the disease itself.

This disease, when it originates from hæmoptysis, is more frequently recovered from than when caused by tubercles. But, "to suppose," says Dr Beddoes, "the ulcerated or confirmed stage of pulmonary consumption, even in rare instances, curable, is to estimate remediable power very highly; and to expect such an event often to occur, is to betray inadequate regard to the generally irreparable nature of the malady."

In persons of a phthisical habit, the slightest symptoms of it ought to be strictly attended to.

Removal to a warm climate in the early stage is of great use. An island, with no high hills in it, at a distance from mountainous countries, where snow may be collected, and at a heat from 60° to 90° , is a very favourable situation on account of the equality of temperature which must prevail in it.

The temperature of the individual apartment in which consumptive patients live, ought to be subject to very little change, perhaps from 65 to 68 or 70° is the most suitable.

With the exception of exercise, indeed, Dr Beddoes seems to think, that a heated apartment, from 60 to 70 of Fahrenheit's scale, is as beneficial as removal of the pa-

tient to a warm climate. This, in conjunction with tincture of digitalis, in doses, with the generality of patients, from 10 to 20 drops, twice or thrice a-day, arrested the progress of the symptoms in various instances. The regulation of temperature, and auxiliary means, seem both necessary; as many, who by attention to medicines alone recover in a great measure, have a recurrence of the symptoms on the accession of cold weather.

The effects of temperature, as well as the inhalation of gaseous substances, have individually had their advocates in the cure of pulmonary consumption. Dr Beddoes gives many instances of the most marked advantage from attention to these particulars alone, among which he adduces cases, where confining the patient in a cow-house, or in the neighbourhood of these animals, was the principal treatment, and where by too early removal from these places all the symptoms recurred.

I have little hesitation in observing, that the inhaling of various gases may be of the very greatest advantage in the cure of many diseases; they are certainly far preferable to the too commonly adopted plan of loading the patient's stomach by a multitude of hurtful, or at best useless drugs. Strict attention to

the effects of these different substances, both in health and disease, would certainly remove much of the doubt upon these subjects which at present perplex us.

Dr Beddoes found, that confinement in a cow-house, even after the exhibition of digitalis, cicuta, opium, hyocianus, &c. had failed in relieving the symptoms, produced the most marked advantage. Still, however, in some cases, he deemed it proper to employ one or more of these medicines, with the occasional use of acids during the confinement in the cow-house. The only beneficial effects attending this inhalation of the atmosphere of a cow-house, Dr Beddoes conceives to be from its immediate effect on the ulcerated lungs. From this it would appear, that even he has no great faith in this application in the tubercular stage. He, however, thinks, that the presence of cows is not absolutely necessary, as the gases proper for the purpose may be formed from various materials without the cows being present.

All exercises of gestation, where little bodily exertion is made, are most useful in phthisis, particularly in those subject to hæmoptysis. The least fatiguing exercise must be prescribed to the feeblest, and

swinging or sailing seem well calculated under such circumstances.

Flannel may be advantageously worn during the incipient stage,

Previously to the tubercles becoming much inflamed, they may undoubtedly be benefited, perhaps entirely removed, by the solution of the muriate of lime, beginning with a drachm a-day, and gradually increasing it to an ounce. As these tubercles seem difficult of removal, we ought to prevent evident inflammation of them taking place, and in this way the disease may be prevented from terminating fatally for several years. No exertion in respiration, with low diet and blood-letting, seem best adapted for this purpose.

When an inflammatory state of the system accompanies phthisis, blood-letting may be used with propriety; but unless this be evident, such treatment must be hurtful,

It is only in the robust, and those who have not suffered emaciation, that blood-letting, &c. can be employed with impunity; but in those debilitated by previous irregularity of living, or by age, it is highly destructive. With them nourishing food and stimulants are to be employed.

If pain in the side be violent, one bleeding may relieve it, but if lingering and teaz-

ing, blistering will remove it ; and when the superficial irritation occasioned by blisters is ineffectual, we may sometimes derive advantage from issues in the breast.

“ Digitalis,” Dr Beddoes observes, “ in carefully regulated doses, that is, so administered as not to induce sickness or languor, very regularly increases the momentum of the blood.” Thus he reckons it a stimulant to a certain extent. “ I have known digitalis,” he says, “ occasion an increase of the pulse from 76 to 120, with heat of skin and headache.”

When digitalis had evidently failed in removing the symptoms of phthisis pulmonalis, the best effects were produced when there was given along with it opium, calomel, bitters, &c. The soporific power of this medicine in tincture, diluted by water, or in powder, has been, in many instances, to the full, as remarkable as that of opium. Dr Beddoes even thinks that digitalis increases the organic action of the contractile fibre, as much, or more, than opium ; but that it does not so much, or so immediately, increase the organic action of the nerves.

Tincture is the best form in which digitalis ought to be administered. In substance, infusion, &c. it creates nausea, and

is apt to become cathartic, or to prove diuretic, which are states during consumption equally to be guarded against.

A child of five years old may in general take five drops of the tincture, a tea spoonful of the infusion, or the decoction, or a quarter of a grain of the powder thrice a day in water. Adults may commence with ten drops of the tincture, a table spoonful of the decoction or the infusion, or one grain of the powder for a dose.

When the sputa in phthisis becomes black, fetid, or putrid, we can only overcome this tendency by the most active treatment, which must be persevered in or discontinued according to its effects on the general habit; and in these advanced stages of this complaint, the inhalation of the fumes of acids, the muriatic for instance, may be employed with at least as great chance of success as any other remedy with which we are acquainted.

Demulcents will relieve the cough, but they load and oppress the stomach by their oleaginous and mucilaginous quality. The milk of different animals has, on this principle, been administered in phthisis, with, it has been thought, apparent advantage.

Opiates relieve the cough, while they procure sleep, and thus give temporary ease. They increase the sweating, but the ease they give, when inflammatory symptoms are absent, more than compensates for this.

When the cough owes its existence to an affection of the mucous membrane, blisters are serviceable in relieving it; but they seem to have little effect in deeper seated affections of the lungs, as when tubercles exist in them, or when they have become ulcerated.

Vitriolic acid, diluted in a decoction of bark, is very effectual in preventing the night sweats, and may be used with safety. These sweats never ought to be allowed to rest on the skin, but to be assiduously wiped off.

During the cold stage of hectic fever, hot water applied, with the internal use of spices, opiates and other heating medicines, may be used with advantage; and during the hot fit, cold water ought to be applied with the internal use of ice-water, or ice-cream, &c.

In consumptive cases, generous diet, with fermented liquors, provided they do not occasion heat of the skin and cough, are always to be allowed. In them, also, the quantity of wine, or of any other nourish-

ment, as well as the quantity of exhilarating medicines, must be regulated by the evacuations, and state of debility.

We should be cautious in prescribing purgatives during costiveness in this disease, as diarrhœa is apt to ensue. Emollient glysters answer better, and are more safe. Opiates, in combination with astringents and mucilages, palliate the diarrhœa, so frequent in advanced stages of phthisis.

The aphthous sores in the mouth may be advantageously rinsed with an infusion of bark.

When the feet become œdematous, they ought to be rubbed with camphorated oil, and a tight linen roller applied from the points of the toes to above where the swelling has reached.

Properly shaped cushions may, when carefully applied, protect the ulcerated parts from being irritated by pressure. Such parts may likewise, with great advantage, be washed with equal parts of ardent spirits, and laudanum.

Cure of
Hydroce-
phalus, or
Water in
the Head.

If we expect to be successful in our practice in this disease, we must be particularly attentive to the various little changes which take place in the child's health, even indeed previous to any sufficiently marked derangement taking place in it to excite our alarm.

It is in the early period of the disease when remedies can be applied with the greatest advantage, and I am sorry to say that, in too many cases, nothing at this important period is done, except the administration of the most trifling and insipid substances that can be thought of. But still worse than this, substances are daily employed which assuredly do harm.

In order to effect the cure of any disease, it is of course first necessary to know its nature, and the particular qualities of the substances we employ, and to administer them as soon as possible. This is particularly necessary with the disease under consideration; for by not understanding its nature, or deferring remedies to the last, we not only prevent the good effects which might have been derived from the early application of proper remedies, and unnecessarily add to the infant's sufferings, but preclude the possibility of success.

It is a good general rule, in the treatment of this complaint, to apply an extensive blis-

ter over the whole head, and to repeat this application, if the symptoms be violent, with the application of leeches to the temples, till the incessant screamings of the child cease, till the pulse becomes milder and less frequent, and also to administer purgative medicines till the stools become of a natural colour.

In addition to the cap blister, then, I have frequently found it necessary not only to apply leeches to the temples ; but even to open the jugular vein before the pulse diminished in force and frequency, or the general inflammatory symptoms of the system ceased.

I have found it absolutely necessary, in consequence of the recurrence of the symptoms, to repeat the application of the blister over the head from 12 to 16 times ; and in the intervals, there was so great a propensity in the head to fall to one side, that I have been obliged to attach laces all round it, which were fixed to the cap by the one end, and to the body-clothes at the other, to prevent it from falling in these directions. Even such patients, however, by the above treatment, have recovered completely.

I am aware, that blistering the head in such complaints has long been a favourite remedy among physicians ; but for the most part, conceiving this a last remedy, they de-

fer it till they have used every other remedy that they could think of; and then its application is in general of no use.

When the inflammatory symptoms have continued for a considerable length of time, independently of our attempts to remove them, and although the child's general habit becomes much exhausted, if the pulse be still unsubdued, the bleeding, &c. must be persevered in.

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**Cure of
Dropsy.**

Anasarca is the most cureable species of this disease. Hydrothorax and ascites are less so; but nearly the same method of cure with respect to internal remedies, seems to suit every species of dropsy.

Our principal objects in the cure of dropsy, is to remove the causes of the disease, such as intemperance, &c. to evacuate the serous fluid, and restore the lost tone of the system. Indeed, without removing the first cause, the evacuation of the fluid tends only to hasten the dissolution of the patient.

Tonic medicines may therefore be used during the whole course of the disease, and especially after the fluid has been evacuated. The tonics most useful, are the chalybeates,

Peruvian bark, and the various bitters which may all be joined with aromatics. Cold bath too, is an excellent tonic; but its use ought to be delayed till the system has been somewhat invigorated. Tincture of cantharides, also, in a dose of 20 drops thrice a-day in water, is a good diuretic, while it, at the same time, invigorates the debilitated vessels, and removes the laxity of the habit in general.

Where laxatives are deemed necessary, a preference in general should be given to the neutral salts, as they sometimes produce diuretic effects. Diuretics are good remedies in every species of dropsy, as squilla, &c. in the dose of one grain every day. In some cases, diuretics without any purgative quality, must be used, as the strength of the patient will not admit of any such evacuation.

The diuretic effects of cream of tartar, appear most conspicuous when administered in a very diluted state. One dram of Sp. *Ætheris Nitrosi*, formerly known by the name of *Spiritus Nitri Dulcis*, taken in water, is a good diuretic.

A pill containing one grain of powdered squilla thrice a-day, seems a very useful remedy in dropsical swellings.

Large quantities of watery liquors may be used in dropsies with the utmost pro-

priety ; and abstinence from them can do no good.

We perform the operation in hydrothorax, or water in the chest, by introducing a trocar into the cavity of the chest, half-way between the sternum and vertebræ, or the breast and back bone, between the 5th and 6th ribs.

We ought to make an incision through the integuments about an inch in length immediately over the rib, and introduce the trocar close upon the upper edge of the under rib, to avoid wounding the vessels running under the edge of the one above.

Patients are less apt to faint in drawing off the water in hydrothorax, than in ascites.

In performing the operation for ascites, we introduce a trocar in the centre, below the umbilicus or navel, into the cavity of the abdomen.

While the water is discharging from the belly, we may prevent sickness and fainting by a bandage put round the body, and gradually tightened while the water flows. If the intestines come in the way while the water is flowing, and prevent it being evacuated, a probe may be introduced to remove them.

Sometimes the quantity of water thus drawn from a dropsical person is so immense as to weigh more than the body of the patient.

Evacuation of the water in hydrothorax and ascites, and afterward bracing the infebled system, is perhaps the most rational method of cure.

When the water is in cysts, we are often disappointed in our attempts to draw it off by the trocar. Incysted dropsy is therefore seldom, if indeed ever, cured.

In the commencement of anasarca, bandaging, friction, and moderate exercise, are often of the greatest advantage. In bandaging anasarcaous limbs, it ought always to be done before getting out of bed, and the compression ought never to be greater on the upper than on the lower part of the limb. We should also avoid all tight ligatures, garters for instance, about the legs of dropsical persons. Friction in anasarcaous limbs is more effectual in the morning than in the evening after they have swelled. This should be done from below upward, and not alternately upward and downward. The hand, a piece of flannel, or the flesh-brush, answer this purpose most conveniently.

The action of the muscles during exercise also prevents the swelling, which benefit is not obtained in sitting or standing.

This puncturing of the extremities in anasarca is bad, as they are then apt to run into mortification.

Leucorrhœa.

Though this is most frequently a disease of debility, and only to be treated by tonic remedies ; yet it is sometimes, though very rarely, accompanied by active inflammation, and requires directly opposite means, such as copious venesection, &c.

From the general want of tone in the system, however, it will easily be seen why tonic remedies have maintained their character in preference to every other.

Leucorrhœa has in general resisted every means that can be devised for its removal, and has, therefore, by medical men, long been classed among irremediable diseases.

This disease, however, the well regulated use of cantharides never fails of removing, while it at the sametime invigorates the whole system.

I well know that this substance, in the hands of those who, from want of observation, want of experience, or want of patience to watch its effects, often fails of success; but this failure, as might be expected, is rarely attributed to its true cause, which rests entirely with the physician, but to the inefficacy or dangerous nature of the medicine itself.

To such gentlemen as are in the habit of expressing such opinions, either privately, or in their class-rooms, I have only to observe, that I shall engage to cure at least 96 in 100 of uncombined cases, and that such cures shall continue for the remainder of the lives of the patients, unless similar causes to what first induced the disease cause a recurrence of it. This is a test to which few if any other articles in the materia medica can be put. I know that, in many cases, the administration of this medicine, as well as the cases in which it alone can be efficacious, requires the nicest discrimination, and the greatest attention, which experience and patient attention alone can bestow. But, without these, rash judgment and hasty opinion can exist only in proportion to the public confidence which the assertor has gained. In the page where the names of

those are to be found, who by patience, industry, and unwearied attention, have contributed to the alleviation of the sufferings of mankind, such names are not known. It is a disgrace to science that such a large proportion of them exist.

The rules for the administration of this medicine, are as follow :

1st, Twenty drops of the tincture of cantharides, (according to the London pharmacopeia), may be taken in a glass of water thrice a-day, and the dose gradually increased till some degree of uneasiness is felt in passing water, when it must be diminished ; or, if the sensation be severe, the medicine is to be entirely left off, till this sensation abates, when it is again to be had recourse to in doses sufficiently great similarly to affect the system. This may be known by the increased force and frequency of the pulse, as well as by the symptom above alluded to. If the difficulty in passing water become suddenly troublesome, clothes dipt in warm water, and applied to the belly and between the thighs, will assist in relieving it. At such a time, also, a smart dose of any kind of purgative medicine may be taken.

2d, If pain, or even uneasiness, at sto-

much be produced by the tincture, a small tea cupful of an infusion of camomile flowers, taken along with each dose, will relieve it.

3d, If the appetite be unimpaired, nourishing soups, plain roast or boiled meat, fowl or fish, with vegetables, simply dressed, are the most proper kind of food, with one, two, or even three, glasses of wine after dinner. For common drink, I should recommend soda-water, or simple toast and water.

4th, No degree of cold, if the air be dry, can do the slightest harm. Cold lavation, or even cold bathing, may, if in other respects agreeable, be used with the greatest advantage. Moderate exercise on foot, or in a carriage, is extremely proper; but when the effect of the tincture has become troublesome, it will be necessary to refrain from every species of exercise, and to recline much on a sofa.

Persons predisposed to glandular swellings cannot use the cantharides but with the utmost caution. Danger may even arise from the use of this medicine under these circumstances, but this must greatly depend on the situation of the enlarged glands.

By those, too, affected with pain in the

chest, dry, hard, or teasing cough, the cantharides must not be used, or only with the very greatest caution, and under the inspection of one accustomed to prescribe it. Regulated thus we may insure its salutary effects, without incurring the risk of those pernicious ones which attend daring ignorance, or equally culpable imprudence.

Fever.
 —
 Ventila-
 tion and
 Cleanli-
 ness.

Consumptions and fevers, we see by arithmetical demonstration, are amongst the most universal and fatal maladies of our island. We, with uncommon alacrity, issue orders for vessels to be put under quarantine, even if they are supposed to contain diseases which we have reason to believe can scarcely exist in our climate, and yet we thus tamely allow diseases to exist among ourselves, and be propagated, without half the attention being paid them which is wasted on the others.

The medical attendant can do little more than attempt to remove this or any other disease, when it has been actually formed, and represent the effects of such complaints

on society, that the legislators of the country may cause the proper measures to be adopted for their prevention. If these measures, which so loudly call for legal interference, are still overlooked, we know well who ought to be blamed; and, in such omissions, we only see a part of that system of neglect which, to the disgrace of our rulers, has too long existed in almost every thing that relates to the preservation of the health and lives of individuals,—the medical police of the country.

The local causes of fever, as well as the police for them, I have already pointed out, and must not now dwell upon the subject.

The patient, in this disease, ought either to be removed from the infected air, or the corrupted air should be corrected, and frequent changes of bed and body-linen ought to be observed. Constant and free ventilation, therefore, during fever, is absolutely necessary.

In fever, indeed, no cordial is so refreshing as cool fresh air; the patient's bed-chamber ought therefore to be kept as pure as possible, and he ought not, as too often has been the case, to be stifled in his own putrid atmosphere by well meaning but injudicious attendants. Besides ventilating,

it is often also necessary to correct the bad air of the sick room. This may be done by sprinkling vinegar in it, or by diffusing through it the steams of nitrous or oximuriatic acid.

Although, therefore, fresh air may perhaps have no great effect in destroying febrile contagion, yet it certainly dilutes and renders it in a great measure inert; it therefore ought always to constitute part of our means of cure in fever. In every stage of this disease, then, though the patient should breathe no other infection but that of his own atmosphere, it will be necessary to keep the curtains of the bed open, and use all other means to procure free ventilation.

In every stage of fever, also, cleanliness must be attended to; clean linen may be used at all times, being very agreeable, and often the means of procuring a quiet and refreshing sleep. The linen, however, removed from the sick should be instantly immersed in a tub of cold water, rinsed out and hung up till nearly dry, and then fumigated before it is taken from the wash-house. This may be done with vinegar, nitrous, sulphuric, or muriatic acid, by which the noxious particles become inert and innocent, or are destroyed. Washing the

walls, also, with lime dissolved in water, has been long practised for the purpose of decomposing the effluvia, but this quality of it has been called in question by Mr Morveau, who gives some experiments to prove that air, in which infectious effluvia exists, is not at all purified by agitating it with lime water. The practice, however, of washing the walls of houses containing sick persons, is very useful in keeping them clean; and this, with ventilation in slight, or even in pretty severe cases, is found to be highly beneficial. I have often observed, that by these measures alone, or by merely removing the patient from foul ill-aired houses to a pure cool air, the symptoms of the disease in a very few hours abated in violence, and even without the use of medicines the patient became perfectly well.

When fumigations, which are universally allowed to be of the greatest benefit in fevers, are adopted, from that moment the progress of the fever seems arrested in that place, as none are afterwards in general seized, or if so, it is in a very mild degree.

In typhus, in particular, not only ventilation is to be observed, but there ought to be no fire in the apartment, no curtains on the

bed, and as little furniture in the room as possible.

The particular treatment in fevers, as in many other disorders, must greatly depend on the season of the year, and the constitution and manner of living of the patient.

Drink. Water, as a drink in fevers, may be used with the utmost propriety if the patient desires it ; if it be deemed too insipid, we may dissolve it in currant jelly, or a variety of syrups ; or apples sliced and roasted, tamarinds, sage, balm, or toasted loaf-bread, &c., may be infused in it. A little beef-tea, also barley-water, or gruel, answers well.

Patients in febrile complaints become sooner disgusted with sweet or aromatic drinks than by the use of barley-water, or water-gruel, acidulated with lemon juice, and a small proportion of wine. Small beer or butter milk are generally very grateful to them, and any of them are preferable to water alone.

Acids are extremely proper in fever, but ascescent food produces flatulence, and impedes digestion. Farinaceous vegetables, such as peaches, &c. are useful ; and roasted or boiled apples are good articles of food in fevers, but are less nourishing than farinaceous vegetables. All acescent fruits are ren-

dered less so, and are more nourishing, when boiled or baked than otherwise. Boiled apples are preferable to raw ones, and may be taken with advantage in every period of fever.

However high a fever may be, the sick, *if they desire it*, may be nourished with weak soups, animal jellies, simple vegetables, &c. with the greatest propriety.

During perspiration, or sweating, by whatever means induced, the drink must be warm, except in those debilitating sweats which reduce the strength without yielding relief.

We are greatly indebted to the late Dr Currie of Liverpool for the accurate observations he has made on the effects of cold water in fevers. It is used in the form of affusion, immersion, by bathing the body with a sponge, &c.

Applica-
tion of
Cold
Water.

It would appear that the cold, applied to the body in fever, is always most evidently beneficial early in the disease, before great and permanent debility is produced; if used after this, some warm wine, or any similar cordial, ought to be taken immediately after.

The most proper period for the affusion of cold water, is immediately when the hot

stage is completely formed ; but we must be careful that the cold stage be completely over. When this is used, as soon as the hot stage is completely formed, it often entirely arrests the progress of the fever ; but if this be delayed till the third or fourth day, although such a termination is not to be expected, this practice will greatly moderate the symptoms, and probably shorten the disease. In advanced stages, however, when the patient is much debilitated, tepid vinegar and water is of greater benefit than the cold affusion ; and the continuance of the cold affusion, when the patient is convalescent, is often injurious. At any time, applied in too great a degree, it brings on diarrhæa.

The immediate effects of cold affusion are diminution of heat ; the pulse becomes less frequent, and gentle perspirations, followed by sleep, are induced. As the affusion of cold water is a formidable operation ; and as the frequent application of it by a sponge is attended with many inconveniences, I have for several years past reaped all the good effects of either of these applications, by the application of a large bladder full of water applied over the region of the stomach. Indeed the decided advantage of this mode

of applying cold is so conspicuous, that I should imagine it fully adequate to answer every purpose, without the inconvenience attending the other modes of application.

The dreadful effects occasioned by the application of the cold affusion during the cold stage, must deter every one from the use of it at that period. Even when the heat is inconsiderable, as is often the case in the last stages of fever, it is improper to use it. Water from 75 to 87 degrees is then preferable.

Water at the temperature of 40, or from that to 60 degrees, is perhaps preferable to cold water; but I have used it greatly below this temperature with signal advantage. Water saturated with salt, a proportion of vinegar added to it, or salt water itself, are all preferable to fresh water. In fevers, the burning heat in the palms and soles of the feet is also greatly relieved by moistening them with vinegar and water; and shaving the head, and applying cloths dipt in cold water, are often extremely refreshing.

The internal use of cold water acts, though less powerfully; exactly similarly to the external application of it, and must be used with the same cautions.

The tepid affusion, immersion, internal

use of warm water, &c. differ from the cold, as it cannot, without the utmost impropriety, be used when the temperature of the body is high, which is the time when the cold can be used with the greatest advantage ; but is chiefly serviceable when the temperature has fallen low, at which period the use of the cold is highly improper.

Dr Currie asserts, that the affusion of tepid water lowers the heat of the body more rapidly than even cold water ; but its effects are less permanent, as he never saw it stop the progress of fever.

Heat. External heat, or exertions by which the heat of the body may be encreased, are to be avoided, such as straining the body or speaking loud or long. Aliment and drink, too, which produce the least irritation, and give the least stimulus, must be preferred, and violent emotions of the mind must be avoided. Kind, humane attention, and a prospect of complete recovery, on the same principle ought to be held up to every patient in fever.

In typhus, we must not diminish the temperature of the body below the healthy degree. Indeed, heat, continued for a great length of time, in all fevers induces costiveness.

Medicines which gently promote perspiration without producing inflammatory action or irritation in the system, may be used in fevers with advantage. Nauseating doses of emetics, such as preparations of antimony, may be employed in preference to ipecacuanha for the purpose of inducing perspiration in continued fevers. Neutral salts also promote perspiration in a slight degree. The aqua ammonia acetatæ, (the spiritus mindereri) is perhaps the best in this respect.

Perspiration.

By inducing a gentle and generally diffused perspiration in continued fevers, we seldom fail of affording relief; but when this is excited by violent heat or highly stimulating medicines, it is partial and clammy, or although general, if profuse, and not attended by relief, it is at least useless, if not hurtful, being in general caused by extreme debility, and ought therefore to be stopped without delay by the administration of properly stimulating medicines to invigorate the system.

During perspiration, it seems at least improper to use the cold water in any form. Perspiration itself is a cooling process, and, if the body be not artificially heated, sufficiently answers the purpose of itself.

In fevers, no evacuations, particularly blood-letting, (which we are not warranted

Evacuations.

to use, unless when strong inflammatory symptoms exist, which did not yield to refrigerant remedies, and repeated purging,) unless the disease has arisen from previous neglect of this last, ought to be made sufficiently great to increase that state of debility which must necessarily follow the disease. In febrile complaints, purging can only be useful in evacuating the overloaded bowels, but beyond this it must be hurtful, as tending to induce debility.

Costiveness, which frequently prevails in the beginning of fevers, is best removed by a mild glyster in preference to cathartic medicines. In typhus, delirium will often arise from costiveness, which being removed, will entirely disappear.

Spontaneous or artificial vomiting early in the disease usually cuts short its progress; but when employed after debility has advanced, it is always hurtful.

Emetics, composed of tartarized antimony, or ipecacuanha, particularly when given early in fevers, usually check their progress; most probably by the violent shock the system sustains from them, by which the deranged functions assume their natural state of action.

Emetics early in the disease remove the almost constant nausea universally com-

plained of, while at the same time they induce gentle perspiration, which is often greatly refreshing.

As an emetic, may be used three grains of tartarized antimony, and fourteen grains of ipecacuanha.

The most favourable time for the exhibition of emetics is in the time of accessions, or when the greatest degree of ease is experienced by the patient, which is mostly about noon, or in the evening.

Emetics ought never to be given in fever when the face is flushed; we ought rather to apply leeches to the temples, and, when the flushing has gone, we may then with propriety, if necessary, employ emetics.

If, however, the first exhibition of an emetic has little good effect, it is seldom that a repetition of them fails to do harm, by exhausting or by purging the patient.

If the headach be not removed by an emetic given early in the disease, a blister applied over the head is an almost certain remedy.

When fevers seem long protracted, blisters applied to the head, breast &c. seem to be attended with beneficial effects. Sinapisms are even preferable to blisters.

Blisters in fever, when the headach is severe, seldom fails in relieving it.

In bad cases of typhus, however, there is a great disposition to gangrene, on which account blisters ought not to be used ; but in milder cases they may probably be used with advantage ; but even this seems to be doubted among authors. When applied at an improper time, there is covering the blistered part a dark thick tough matter like leather, but when ruddy, specks appear on it this symptom is favourable.

Stimulants

In the advanced stages of fever, when debility prevails, stimulants, such as wine, bark, &c. may be very usefully employed ; but before this they are probably hurtful.

Where in fevers the powers of life fail, or where the temperature falls below the healthy degree, we must raise it by artificial means. During languor, therefore, and excessive lowness, a little wine may with propriety be taken. On the appearance, also, of petechiæ in typhus, we must abandon the antiphlogistic regimen, and adopt plans to invigorate the system.

Wine may be given in fever when the pulse is soft and frequent, with general debility, particularly if the patient feels a desire for something to support his strength. The doses may, in general, on such occasions, be pretty large, but much must depend on the urgency of the symptoms, and

the former habits of the patient. Under the above circumstances, wine is greatly preferable to bark, or any other substance, as it rests on the stomach when nothing else will. Some farinaceous substance added to it, if agreeable to the stomach, assists its nutritive qualities.

When wine is not to be had, ardent spirits, diluted with water, and sweetened with sugar, has, in many instances, as good an effect as wine; and, among a certain class of people, it is preferred to it. Spirits, however, ought never to be used, unless when wine cannot be procured. Fermented liquors, such as porter, &c. are far preferable to spirits. Those even in health who indulge in fermented liquors, are much more lusty and vigorous than those who use much spirits, who are in general lean, and often paralytic.

In certain states, however, of debility in fevers, although it is extremely difficult to induce a state of intoxication, it ought at all times during them to be strictly avoided.

Where there is a disposition to gangrene in fever, bark, when it rests on the stomach, is perhaps preferable to wine; but both conjoined are to be preferred to either alone. Bark, acidulated with sulphuric, or any other acid, makes it rest on the stomach; when

without it, the bark would be vomited. As bark, however, will not stop continued fever, it is scarcely ever necessary to give it early in that disease ; but, latter in the disease, it obviates symptoms of debility, and shortens the complaint.

During fever, opium may be given, provided the skin is soft, and when the temperature during the exacerbation is not great ; but where the skin is parched, and the heat great, the use of opium must be declined.

In that kind of typhus, also, where the delirium is considerable, without partaking of coma, opium is a powerful medicine in removing the delirium, diminishing the frequency, and increasing the force of the pulse. Wine, in similar instances, may perhaps be preferred, as being at least as permanent in its effects ; but, in some patients, a sufficient quantity of wine to produce beneficial effects cannot be administered, and then opium becomes a medicine of the very greatest value. It is alone by running into opposite extremes, either in the abuse or in the almost complete neglect of this medicine, that its effects in such fevers are imperfectly understood.

Camphor in fever often has a very considerable effect in overcoming restlessness and anxiety, and does not interfere with the ex-

hibition of other medicines. When combined with opium, it often checks obstinate vomiting, which sometimes occurs in fever. Saline draughts given in a state of effervescence also allay this symptom.

When the appetite returns, panada, rice, or sago, may, with the greatest advantage, be added to the wine; but these, or any other kind of food, must be used in small quantity at a time, till the digestive powers gradually assume their wonted vigour. Patients, indeed, never incline to eat much in fever; they may therefore be allowed to take what they choose, as they never will take a sufficient quantity of any thing that can do them harm. I may also observe, that while the patient is in his senses, his own inclination will best determine whether he should sit up or be in bed.

In jail fevers, as in other contagions, we ought, where it is possible, to remove its causes, and our next object is to correct or destroy it when formed.

Cure of
Jail Fever.

One way of preventing contagion in jails, &c. is to make the bedsteads of iron instead of wood, in which last substance it often lurks for a long time.

The beds, also, of all patients who die of

jail fever ought, before again being used, to be properly fumigated, washed, and aired.

In jail fever, our first general object ought to be to remove the prisoners into the other apartments, to wash them clean with warm or cold water, to fumigate their clothes with sulphuric acid and nitre; to enlarge the apartments, and form openings near the ceiling to admit of a free circulation of air.

In this disease, in common with other febrile complaints, fresh supplies of pure air are absolutely necessary, not only for the comfort of the sick, but absolutely for the removal of the disease. Washing the body, too, and frequent changes of clean linen, are absolutely necessary.

Our best remedies in jail fever, when the disease has somewhat advanced, are such as moderate the symptoms of the fever, without diminishing the strength; and those which support the strength, without increasing the heat of the body, or the frequency of the pulse. For this purpose, some antimonial medicines, and likewise vitriolic ether, are individually very proper. The vapour also arising from nitre, decomposed by vitriolic acid, or the oxygenated muriatic acid formerly mentioned, are highly proper for destroying contagion of every kind.

Acidulated drinks are extremely proper during the whole course of the disease.

There can be no doubt of the utility of the cold bath in jail fever; we have many instances of its having proved highly beneficial even in the very worst and most advanced cases. One case at present occurs to my recollection, related by Mr Howard, of a prisoner in one of the jails which he visited, who was apparently dead, but, on being brought out to the court, where the well was pumped upon him, he, to the amazement of every one present, recovered. Mr Howard says he has seen several instances of the same kind.

Dr Currie says, that in hospitals, manufactories, and prisons—situations in which the low contagious fever so frequently originates, the practice I have mentioned (cold affusion, immersion, &c.) may be followed with great ease, safety and advantage; but it is in a more particular degree applicable to this contagion when it appears on ship-board, because in that situation the useful means of prevention or cure are necessarily limited, and the eminence of the danger requires a remedy that operates with speed as well as efficacy. The waters of the ocean afford this remedy: in every point of view, a most happy one for mariners, since it can be applied almost as easily as it can be procured.

Delirium in jail fever is seldom, if ever, relieved either by leeches or blisters, but cold embrocations, or shaving the head, are often useful. This fever and others which resemble it, seldom admit of bleeding. Even although symptoms should indicate the propriety of blood-letting, this practice ought to be adopted with the very greatest caution, as, in almost every instance, it is injurious.

Sweating in this disease ought to be used early, but not persevered in, unless an abatement of the symptoms follows.

Purging more than is absolutely necessary merely to evacuate the intestines, is highly injurious in jail fever, as it is often followed by colliquative diarrhæa, and sometimes even by gangrene of the intestines. When there is a tendency to purging, which sometimes happens, absorbents and opiates, with small doses of ipecacuanha and rhubarb are extremely proper, but then antimonial medicines and acids, whether vegetable or mineral, must be avoided.

When the stomach in this fever is irritable, a pill composed of calomel and opium is extremely useful, as it allays the irritation, and in a shorter or longer time occasions evacuation of the bowels.

From this disease being most common among the lower orders of the people, whose

stomachs may perhaps be overloaded by coarse food, we ought at first to prescribe a vomit to empty them. Even about the seventh or eighth day, when the tongue becomes dry and foul, a gentle vomit of ipecacuanha renders it clean. Vomits, however, ought to be used early in the disease, and never when the contagion has excited vomiting, and rendered the stomach irritable. Late in the disease vomits ought to be used with great caution. Tartar emetic seems a preferable substance for vomiting; a grain every quarter of an hour till it produces its effects, is, for an adult, a sufficient dose.

Blisters are sometimes serviceable in jail fever, when there is inflammatory action of the brain. If, however, they are used, it must be early in the disease, but they ought in all stages of it to be used with the greatest caution, on account of the pain they occasion, and the foul sores they produce. When, however, petechiæ, or the diverging lines, mentioned in the symptoms, appear, they must not be used, as then they are in particular apt to induce gangrene.

When gangrenous symptoms appear, bark given both by the mouth and by glyster, is highly proper and necessary. Even, indeed, after the fever has disappeared, we ought to

administer nourishing diet, with bark, &c. for several weeks, in order that we may restore the languid powers of digestion.

Port wine, to the amount of one pint, or even a quart a day, when debility and depression of spirits have come on, are extremely proper.

**Cure of
Dysentery.**

The best expedient in seasons when dysentery prevails, is to divide the sick, and lay them in churches and barns, or ruinous houses only, where neither they nor the nurses can confine the air.

Copious discharges of bile have been found to relieve the symptoms of dysentery. In some cases, even without the use of medicines, the griping and tenesmus gradually diminish, and the stools return to their natural appearance.

Mucilaginous medicines, such as sago, &c. have been found of great benefit. The most proper drinks during this disease are cooling mucilaginous decoctions, corrected gently with aromatics, rice-water, oatmeal, gruel, lintseed-tea, decoctions of althea, &c. qualified with a little mace, cinnamon. car-

raway-seeds, &c. Milk ought not to be used in any stage of the complaint.

If the patient be strong, and of a good constitution, if the pulse be full, and there exists a considerable degree of fever, bleeding is both necessary and useful; but if the symptoms be violent, the patient weak and depressed, with a feeble pulse, bleeding is in general improper. Blisters also, or fomentation with warm liquids, applied to the belly, are certainly attended with most beneficial effects.

The most successful cure of dysentery is obtained by an early attention to preventing the constriction and consequent stagnation of fœces in that part of the intestines called the colon. Early, therefore, in the disease, the frequent use of mild glysters, with a small proportion of laudanum mixed with them, are highly proper, particularly if administered immediately after stool. Glysters are not so useful as purges.

No medicine, therefore, is so much calculated ultimately to promote the regular action and direction of the peristaltic motion, as the repeated use of gentle emetics and purgatives. And, upon the whole, in ordinary cases, the regular administration of emetics and purgatives during the day, and anodyne diaphoretics during the night, is the

most advisable practice. The neutral salts, such as Glauber and Epsom, are useful purges in this complaint; so are castor oil. Rhubarb given along with calomel and jal-lap, when we wish to purge briskly, may be employed. All these must be given at first in very gentle doses, and gradually increased till we effect the free evacuation of the bowels.

Diaphoretics seem, in this disease, of much benefit, and small doses of opium and ipecacuanha, form a good medicine of this kind. Opiates in small doses seem to be more decidedly useful than in any other, where a great degree of inflammation prevails. Probably from their effects in relieving the spasmodic action of the intestines, they relieve pain, suppress the constant desire to go to stool, while they laterly render the discharges more free and less painful. Opium, then, as an antispasmodic, may be used with advantage in relieving the pain and constriction of the intestines, but it is apt to produce costiveness. Perhaps other antispasmodics, not possessing such effects, may be used with greater advantage. An opiate and a purge given alternately often produce very beneficial effects.

Where purging fails of giving relief, salivation with mercury has been recommended

as being useful. Where wine, also, does not sour on the stomach, it may be used with propriety; but where this occurs, and the pulse and spirits are low, a little spirits and water is preferable. When acidity does prevail, magnesia will generally remove it. Toward the termination of the disease, but not till then, when the inflammation has subsided, we may use glysters of a gently astringent nature.

The disease is sometimes combined with intermittent fever, when Peruvian bark may be used with propriety. Bark, indeed, in most instances, may, during the whole course of the disease, be used with the greatest propriety. In cases where mortification is likely to ensue, bark seems to be our best remedy. Rhubarb may, at the same time, be given to prevent it lodging too long in the bowels. Camomile tea, also, used both internally, and in the form of glyster, is a very efficacious remedy.

A cool light regimen will often keep diseases of the liver from spreading for many years. Spirituous liquors, on the other hand, should be avoided, as having a tendency,

Cure of
Liver
Complaints

more directly, to produce diseases of that viscus, while at the same time they have a tendency to weaken the tone of the stomach.

Acute hepatites may be cured by resolution, by purging, or by evacuations of blood, according to the urgency of the symptoms; by blisters, fomentations, and by emollient glysters, and diluent and refringent remedies. Depleting means, however, can only be useful in the early or acute stages of this disease. Blood-letting must be repeated according to the violence of the symptoms, and repeated blistering is always preferable to a single vesication. Saline laxatives are highly expedient, and very useful. Gentle sudorifics, also, are highly beneficial in preventing suppuration. Mercury, however, given to affect the mouth, is perhaps more advantageously used in hepatites, to prevent suppuration, after antiphlogistic regimen, bleeding and purging have been adopted without success; and it has been thought, though perhaps unjustly, most successful when applied by friction over the region of the liver.

Where, in this disease, inflammation and fever cannot be prevented, the flesh and strength more rapidly decrease, and in that state recovery is rather uncommon. But

even in a diseased structure of the liver, which has arisen from inflammation, mercury, taken to produce moderate salivation, has been found extremely useful.

When suppuration takes place, the matter may most probably find its way into the abdomen, and may thence be discharged by operation; or when strong adhesions have taken place, it may be immediately evacuated externally by a direct incision. But when an external opening is made to evacuate the matter, it is sometimes years in healing.

It is to be observed that the disease of the liver is not a common one, and is not to be confounded with the disease of the gall bladder, which is a more common disease, and is often attended with a great deal of pain.

Diseases of the digestive organs are both amazingly numerous and distressing; certainly, however, they admit of some scientific method of considering and of relieving them.

If disease exists in the stomach or the bowels, which may prevent digestion of the victuals, or expulsion of the useless parts, we ought to correct that disease by an examination of its nature, and corresponding treatment, and by no means to hurry the one or to force the other, by a multitude of hurtful drugs.

Stomach complaints are greatly modified

Cure of
Stomach
Complaints

by the remote causes of them, as well as by the particular constitution of the person affected; and consequently, in the administration of medicines in these diseases, much must depend on their particular nature, as well as on the peculiarity of constitution of the person employing these means.

I have always understood it to be a good general rule in the treatment of certain diseases, to regulate the natural evacuations, and judiciously to suppress morbid discharges. Both in health and disease, it is also to be recollected, that digestion is best performed during a state of rest. Dr Harwood of Cambridge fed two pointers equally well, the one he suffered to rest, the other he kept in constant exercise during two hours; had them both killed; in the one kept quiet, the food was digested, but in the other, that process had scarcely begun.

The most judicious treatment will not remedy the disease, if the exciting causes continue to operate; such as improprieties of diet, agitation of mind, sedentary habits, or impure air. Unless great attention, therefore, be paid to the patient's food, medicines of any kind will do little or no good. Patients are consequently recommended to be particularly attentive to their

diet. Their food should be nutritious, and easy of digestion.

It is difficult, however, in many cases, to correct the disease either by diet or medicines. For although stomach complaints, when they exist in consequence of debility of that organ, may be alleviated, or entirely removed, yet when they originate from an organic affection of the stomach, they are always incurable, and soon prove fatal. Scirrhus, for instance, of the pylorus, will seldom, if ever, admit of a cure.

In recent stomachic complaints, an emetic should always be prescribed. These are more useful in sudden sickness than in old habitual vomiting. They can, however, only unload it of its contents, but will not in general restore it to its healthy action. Gentle doses of mild physic are much better.

The excess of acidity may be corrected by magnesia, lime-water, and all alkaline remedies. Large doses of acid, also, for the removal of acidity in the stomach, have been recommended, and I have reason to believe that they may be often used with success.

Blisters, applied over the stomach of those in whom it has been deranged by drinking intoxicating liquors, are often of great service.

In stomachs of languid digestion, a tea spoonful of aromatic tincture in a little water, immediately after dinner, is of great service. The tone of the stomach may also be restored by the various bitters occasionally united with rhubarb, &c.—Carbonate of iron and Peruvian bark, in equal parts, with one half part of powdered ginger, constitutes an excellent stomachic; or, four parts of magnesia, one of rhubarb, and one half part of powdered ginger—One small tea spoonful to be taken in water or wine for a dose. One part of powdered gentian, or Columba root, with four parts of Peruvian bark, put into a pint of boiling water, and a wine glassful taken cold twice or thrice a-day, is also an excellent stomachic. I have also found a tincture made of camomile flowers of great benefit in these complaints.

Bitters certainly act as tonics, but in diseased stomachs, a continuance in their use at length hurts that organ, and often injures the whole general habit.

Dr Beddoes has observed symptoms of indigestion disappear, and the appetite greatly improve, under the use of digitalis. Equal parts of the compound tincture of rhubarb and senna is an excellent and safe stomachic. Exposure to cold air, and the use of moderate exercise, are excellent remedies in

these complaints; they act by invigorating the system in general, and the stomach as a part of the whole.

Symptoms of dyspepsia, from diminished secretion of bile, are often removed by a fit of sea sickness. In a diseased state of the stomach, the patient cherishes his fears, and every alteration in his health, whether real or imaginary, alarms and distresses him. But however capricious and inconsistent a person may be during these affections, he must not, as is too often the case, be treated by railery, or by turning his complaints into ridicule, as that hurts him exceedingly.

If vertigo arises from the stomach, it may be easily remedied; but if it be in consequence of a broken constitution, its removal is very doubtful.

Coughs of a distressing and teasing nature often entirely disappear on disorders of the digestive organs being removed.

In diseased states of the digestive organs, palpitation of the heart is not uncommon, occasioning great alarm on the part of the patient, which is entirely removed, and the mind rendered tranquil, by removal of such affections of the stomach or intestines.

Cure of
Bowel
Com-
plaints.

It is often extremely difficult to distinguish between some affections of the stomach, and others of the bowels; but fortunately, the treatment in the one is most commonly useful in the other.

When diarrhæa has been caused by substances taken into the stomach, we ought to be cautious in our stopping it by astringents, &c. A dose of rhubarb or of neutral salts will remove it with greater certainty; and if nausea or vomiting accompanies it, a vomit, composed of 15 grains or a scruple of Ipecacuanha, may be taken with propriety.

In every variety of disease, and during every period of them, it is absolutely necessary to pay the strictest attention to the state of the bowels. So many complaints arise, or are aggravated, by neglect of these particulars, that till they be regulated, we can scarcely say whether or not the disease entirely depends on such an omission.

The use of any kind of medicine, in such cases, is to regulate the state of the bowels; but when they become regular without medicines, these are rarely useful, and often hurtful. Such persons, consequently, as have lived rather high, though complaints have not been induced by it, feel additional strength on the operation of a gentle purge. In some

instances, violent pains in the bowels, particularly among females, have arisen from terror, grief, or anxiety. Hurtful loads of drugs are prescribed, often ineffectually, for their removal, which might have been more safely and more permanently cured by removing the cause, or by an occasional pill composed of opium and assafoetida. In pains in the bowels, from whatever cause, recourse is too often had to spirituous liquors, which are in most cases injurious. If they arise from diseased organs, the fixed pain in general attending these states will assist our judgment; if from improper quantity or quality of food, liquor of bad quality, &c. a vomit or purge, or one after the other, will in general relieve them.

Provided no debilitating effects are induced by purging, we need not be very hurried in relieving it; but when the appetite fails and the flesh wastes, we should lose no time in its removal.

In some habits, on the removal of a diarrhoea, the system is irritable and the feelings unpleasant, the stomach is affected with flatulence, heartburn, and acidity. In such cases, half a dram of testaceous powder, with a little tincture of gentian, or of columba, and even four or five drops of laudanum, remove it.

One caution necessary in every affection of the bowels, is to prevent costiveness. The bowels are often costive for a time, and then fits of purging come on, and, in order to prevent the latter, the obviating of the former must be particularly attended to.

To excite the bowels into moderate action in costiveness, by mild medicines, is highly proper ; but as all great evacuations are afterward attended by costiveness, we ought to avoid them. To excite, therefore, the peristaltic motion of the intestines without purging, so as to promote the expulsion of what ought to be discharged, is of the very greatest importance. If we can give purgative medicines so as to excite and strengthen the bowels at the same time, we insure their very best effects.

Oily and mucilaginous substances are good aperient medicines ; such are castor oil, with or without a large proportion of mucilage.

Harrowgate water, lime-water, aloes with milk, tobacco-smoke, or the infusion of tobacco, are very useful injections for the removal of *ascarides*. Common salt also, dissolved in water, has, when taken freely, been found of use in expelling worms from the intestines. A dose of calomel, likewise, given in combination with *semen santonic*.

or worm-seed, for two or three successive nights, at bed-time, is often of great service in expelling worms.

In our various cures for this disease, we are nevertheless very defective. Purgative medicines in general, however, seem to be of considerable service; and I have, particularly in ascarides, given calomel combined with assafoetida, with the most decided success.



BOOK II.

OF THE LOCAL CAUSES OF PERMANENT
AND REGULARLY RECURRING DIS-
EASES IN EDINBURGH; AND OF THE
PARTICULAR POLICE FOR THEIR RE-
MOVAL.

INTRODUCTORY REMARKS.

Perhaps the most strict observance of cleanliness and good order, would not entirely remove those scenes of wretchedness which every day present themselves to our view; yet it cannot be doubted that these are sources of disease: indeed this is every day, and in every country, acknowledged; surely, then, their removal would carry along with them those effects which their existence produces; and the most vigorous exertions ought to be made to effect it.

The charitable disposition of my fellow-citizens for the relief of human misery, is well known; and an extraordinary exertion

in this way is never called for, under any rational form, but is liberally, and without the slightest constraint, attended to. They know, that "neither the king's crown, nor the deputed sword, the marshal's truncheon, nor the judge's robe, becometh them with half so good a grace as mercy doth." I could mention many private individuals, whose memory is fresh in all our recollections, who distinguished themselves to the latest hour of their lives in relieving the necessities of their fellow mortals. I could likewise mention many living examples of the same sort, whose private as well as public endeavours are known to be employed in similar duties. To them, "the sweetest joy of wealth and power is to cheer each other's drooping heart, and wipe from the palid cheek the tear of sorrow." They court not public applause; but, when least suspected, leave their abodes of affluence and health, to explore the dungeons, and relieve the wants, of those labouring under every complication of poverty and distress. These are virtues of no common sort, and their rewards shall be of no common kind.

An attempt, however, to lessen the necessity of such services, by rendering the objects of them fewer in number, must at all times

be of great public importance, provided that attempt be practicable, and bears reason along with it. This, in my present attempts, is my sincere wish, and if I fail, it shall be for want of abilities, not from want of inclination.

From the histories of Edinburgh, it would appear that the inhabitants have, even at the most early periods, been sensible that, from the local circumstances of many places in and about the city, various diseases were generated; but neither then nor since has sufficient attention been paid to their amendment or entire removal; for while one is removed, another equally bad uniformly makes its appearance. To the entire removal, then, of these sources of disease, the Legislative Body of our country has never yet paid that attention which the importance of the subject deserves.

There can be no question, that most of the diseases, which every day occur among us, arise from external, and for the most part removeable causes. Influenced by this opinion, I have carefully examined most of those parts of this city and its vicinity, from which, in all probability, many of our diseases arise. I have occasionally conversed with the wretched inhabitants, and have *in general* found their minds in that state of extreme

apathy, which precludes the chance of any alteration for the better being effected by them. It is not therefore, at their instance, or from their remonstrances, that amendments are to be suggested. It was this circumstance which partly induced me to take the subject under consideration, and endeavour, if possible, to excite the attention of those to whom we ought to look for such improvements.

Some of these sources of disease may easily, others with greater difficulty, be removed. The subject is of the utmost importance; and where I fail in doing it that justice which it deserves, I hope some other person, better qualified to execute such a task, will likewise, without hesitation, lay before the public his opinions upon it. If my exertions or opportunities can, however, be of any farther use in assisting to remedy these evils, I shall most willingly devote them to the public service.

In all populous cities, then, in proportion to their want of proper ventilation, &c. the poor are exposed to a variety of wretchedness, scarcely ever known but to those who, from the nature of their pursuits in life, are obliged to witness their wants and sufferings. Individuals and whole families in this very city, whose names and whose wants, to

the generality of people, are equally unknown, now not only perish under the scourge of disease, but in reality are destitute of those very necessities of life which scarcely could keep them alive during health.

“ To take their numbers were to count the sands
That ride in whirlwind the parch'd Libyan air.”

While the community, in general, can only survey the black outline of human distress, without even suffering themselves to attach to it that pity which is really its due, medical practitioners, particularly in large and populous cities, are daily, while prosecuting the duties of their profession, obliged to witness indescribable scenes of misery and wretchedness.

“ Beneath repeated shocks the wretches pine ;
The vigor sinks, the habit melts away ;
The chearful, pure, and animated bloom,
Dies from the face, with squalid atrophy
Devour'd, in sallow melancholy clad.”

If the poor alone were sufferers from the operation of such causes, the wonder would not be so great that nothing has been done for their prevention ; but the rich are often equal sufferers. I do not mean to say that they are so in every respect. They are not like those cold and hungry wretches, who in

general experience a paroxysm of joy only when in a state of intoxication, and who are obliged to hovel together in obscure and cheerless garrets, hardly protected even from the severity of the winter's storm ; or are compelled to groan out their existence in loathsome cellars, and to breathe an atmosphere impregnated with every quality that is destructive of human life ; where, in general, moral principles are as much corrupted as physical powers are destroyed ; where the young of our own species are at once tainted with disease, and trained from infancy in the exercise of every thing that is vicious ; who, if they had been placed in more favourable physical circumstances, and exposed to more favourable moral opportunities, might possibly have done honour to humanity.

Thus, among these wretched people, diseases are generated, which in various ways are carried into every apartment in other parts of the city, which, from their local situation and internal order, would but for this have been spared.

From the observations I have thrown out on this subject, it may probably be expected that I have some brilliant plan to propose which will thoroughly remedy all the faults I have pointed out.

I know, however, it is much easier to point out faults, than to propose such a plan for their removal as will meet with the approbation of every person. The difficulty attending the execution of many useful plans has alone been sufficient to deter from the accomplishment of them. Improvements are likewise frequently abandoned by the interference of those whose interest it often is to suppress them, or even whose power is sufficiently great to effect this purpose. But in important public improvements, these private advantages ought to be particularly examined, and should be sustained, only on condition that the improvements proposed are not to be of greater use to the public than the disadvantages the private individual will suffer from their removal. It should also at all times be recollected, that, in order to effect a general good, particular individuals ought to submit to inconveniences, and even losses.

“ High on yon scroll, inscrib’d o’er Nature’s
shrine,

Live in bright characters the words divine :

IN LIFE’S DISASTROUS SCENES TO OTHERS DO
WHAT YOU WOULD WISH BY OTHERS DONE TO
YOU.

Winds ! wide o’er earth the sacred law convey,
Ye nations hear it ! and ye kings obey !

PART I.**OF THE CAUSES OF DISEASE IN EDINBURGH.**

CHAP. I.**OF NATURAL CAUSES.**

SECT. I.—Of Soil.

THE soil of Edinburgh, and its neighbourhood, is very various. About the eastern extremity of the county, and near the sea, it is light and sandy, but in the greater proportion of the lands it partakes of a stiff clayey bottom. In some parts there exists moss, and from the great irregularity of the ground near Edinburgh, collections of rain and snow water form, which render these particular parts extremely damp, or even constitute lakes of considerable depth:

Limestone also exists in various quarters of the county. The town, then, is built on these smaller hills, and in hollows of various depth and extent; the hilly parts being of stone, and the hollows generally boggy. To the eastward of the city these hollows are also filled with every sort of matter in a putrid state; the multitude of insects generated during the summer months in these reservoirs of filth, is astonishingly great; and many of the neighbouring inhabitants experience from them the most painful bites and stings.

It may probably be unnecessary to adduce one instance in proof of the opinion, that diseases have existed in consequence of collections of nastiness in such hollows, and have completely disappeared when they were removed. I may, however, mention, as an example, the North-loch, that great hollow which divides the Old from the New Town, and over which the North Bridge is built. It is of considerable depth, and extends more than half a mile in length, commencing beyond the north-west side of the castle, and extending almost directly eastward. While this continued less or more filled with water, and as a reservoir of most of the filth and nastiness which this city so

plentifully afforded, forming one mass of putrefaction, the diseases which were acknowledgedly produced by it, were croup and intermittent fever; and the clearest proof that these depended on its existence was, that they have in a great measure disappeared since it was drained. We have every reason to believe that other diseases also were produced by it; but of these, or their effects, from a want of proper discrimination, we are left completely ignorant. Since, however, we are aware of a single circumstance of this sort, which formerly gave origin to diseases, which also disappeared on its removal, I think it but reasonable to suppose, that, by the removal of similar nuisances in different parts of the country, we should be equally successful in removing all similar sources of contamination, and consequently of disease.

SECT. II.—*Climate of Edinburgh.*

ON account of the inequality of the ground about Edinburgh, the temperature is very unequal in the different parts of it at the same moment.

The following observations on this subject were made at Hawkhill, about a mile from the city, and 103 feet above the level of the sea. They comprehend the mean of three years, from 1772 to 1774, which appears to be $47^{\circ} 7$.

Jan.	34 5	The temperature is $47^{\circ} 5$, so that
Feb.	36 6	the difference is inconsiderable.
Mar.	41 7	Edinburgh is near the German
April	46 3	ocean, which is, upon the whole,
May	50 4	two degrees warmer than the stan-
June	57 5	dard; but land, in this latitude, re-
July	60 6	taining snow long after the degree
Aug.	60 6	of cold which produces it ceases, is
Sept.	54 3	always somewhat colder upon the
Oct.	49 7	whole, (let the circumstances be ever
Nov.	41 1	so favourable,) than the sea.
Dec.	38 9	

With respect to the difference of climate upon the hills and in the vallies, I may observe, that the late Dr Hutton of this place, found, that a thermometer kept at the top of Arthur's Seat, usually stood three degrees lower than a thermometer kept at the bottom of it. Hence the height of 800 feet occasioned three degrees of diminution in temperature.

The comparative heat of different heights, however, applies only to the temperature of the air during the summer months.

In winter, the upper strata of the atmosphere are warmer than the lower. Thus, on the 31st January 1776, the thermometer on the summit of Arthur's Seat stood six degrees higher than a thermometer at Hawkhill, which is 634 feet lower. Mr Kirwan considers this superior heat, almost uniformly observed during winter, as owing to a current of warm air from the equator, which rolls toward the north pole during our winter.

Considering that there is but very little more than four degrees of latitude between Edinburgh and London, the difference of climate is remarkable. In the neighbourhood of London, vegetables and fruits of different kinds are more rapidly produced, and more luxuriant in their growth than in Edinburgh; and such fruits as grapes, cucumbers, &c. can be raised in the open fields; while, about Edinburgh, the greatest attention to the management of the hot-beds in which they grow is absolutely necessary, and even then these fruits are for the most part very imperfect.

Storms of wind, or rather hurricanes, are often experienced in this city. It has been supposed by some, that, severe as we may conceive them to be, their violence is much abated by the mountains which immediately

surround the city, and afford it protection. I, however, completely dissent from this opinion; and am rather inclined to think, that the situation of these hills causes the currents of air which are here sometimes so alarming; and for this reason in particular, that the contiguous low-lying towns of the Lothians are not infested in that way.

The north-east wind is observed to be the driest and the coldest on the whole of the eastern coast of Scotland. The easterly wind is of a very different description, being in general moist. During its prevalence, we are seldom free from thick fogs, though completely free from them when the wind blows from any other quarter. These fogs, though never equal to those of London, are often so very great, as to render the city completely invisible, except a few yards around the spectator; and the chilly sensations which are at all times felt during their continuance are, even to the most healthy, extremely unpleasant. Those liable to chronic disorders ever dread their approach; and many, from certain feelings of a disagreeable nature, can, several days previous to any apparent change of weather, foretell the particular nature of it with considerable accuracy. Nor are they patients affected with chronic complaints alone who suffer

from such changes of weather ; for I believe many of our most acute diseases, if they do not arise from it, are certainly rendered much more severe by it. At these times, therefore, the greatest attention, both by the physician and patient, is absolutely necessary. Sudden changes in the state of the weather have often baffled our every exertion to remove some diseases, which, under different circumstances, were easily cured ; even some of the complaints of this place have, on such occasions, been reproduced after they had, for several weeks, been removed.

In this city and its immediate neighbourhood, it generally rains less in March than in November, in the proportion, at a medium, of 7 to 12. It generally rains less in April than in October, in the proportion of one to two nearly, at a medium. It generally rains less in May than in September, and the chances that it does so, are at least as four to three ; when it rains plentifully in May, it generally rains but little in September ; and when it rains one inch or less in May, it rains plentifully in September. The heaviest rains, however, at all times of the year, come from the east and south-east.

SECT. III.—*Situation of Edinburgh.*

EDINBURGH is situated in $55^{\circ} 57'$ north latitude, and in $3^{\circ} 14'$ of longitude west from London. The town of Leith may now be considered as one of its suburbs. It stands in the northern part of the county of Mid-Lothian, about two miles south from the shore of the Frith of Forth, which here is from five to seven miles in breadth; and about 20 miles distant from the German ocean.

The New Town stands on a gently elevated plain to the north of the middle and west part of the Old Town. The New Town is perhaps one of the most elegant in the world; and which, in many respects, forms a striking contrast to the Old Town. It is built on a regular plan, the streets run in strait lines, and are from 60 to 116 feet wide. The houses are of stone, and for the most part of an equal height. Its length is more than a mile, and its breadth nearly half the extent, and it is rapidly increasing in all its dimensions.

St Bernard's Well is situated immediately to the north-west of the New Town, in the beautiful picturesque glen in which the Water of Leith runs. Its water contains sulphureted hydrogen, which evaporates on boiling, leaving the water fit for every ordinary purpose. If the water possesses no medicinal effect, the fine walk to it is certainly advantageous to health.

Edinburgh is surrounded on all sides by lofty hills, except to the northward, where the ground declines gently to the Frith of Forth. Although built on high ground, it stands about the middle of a declivity, commencing at the top of Pentland hills on the south-west, and terminating at the shores of the Firth.

The height of Arthur's Seat on the east, is 700 feet from its base, and 819 from the water-mark at Leith. Salisbury Craggs, about two-thirds of the same height, and separated from it by an immense valley, bounds the city on the east. The beautiful eminence of Corstorphine hill appears on the west or south-west, and the Calton hill toward the north of the Old, and the East of the New Town, is almost encompassed by them. Upon its summit is erected a monument to the memory of Lord Nelson. The hills of Braid, and the extensive ridge of the

Pentland hills, rise to the south. These hills form a magnificent amphitheatre, in which, upon elevated, though in ground of less altitude than these, stands the Scotch metropolis about the middle of a declivity, commencing, as already stated, at the top of Pentland hills, and terminating at the shores of the Firth.

Toward the north and north-west, on the opposite side of the Firth, the bold shores and hills of Fife appear.

Thus, the high peak, the gentle declivity, and the frowning precipice, all here exhibit their respective peculiarities. From the lofty and well ventilated mountainous exposure in our immediate neighbourhood, I may even say, in many parts of our city, the transition is very rapid to those pent-up vallies, or the lanes and *closes* constructed in them, where the breezes of health are scarcely ever felt.

The Old Town of Edinburgh is principally built upon an oblong hill or rather ridge, which is about a mile in length. This part of it is principally termed the High Street; but is variously named in various parts; and extends from the Castle to Holyroodhouse. It terminates abruptly at the west side of the Castle, forming a precipice of 300 feet from its base, but very gradually descends to its

other termination. It receives the name of the Castle-Hill nearest to the Castle, from the highest part of which the whole city and suburbs of Edinburgh can be distinctly seen; a little farther down, it is called the Lawn Market, which extends to St Giles's Cathedral, when it is called the High Street; farther down it is called the Cannongate, which name it preserves till it terminates at Holyroodhouse. From its commencement to its termination, it rises about 180 feet; and its height from the high-water mark at Leith is 274.

Immediately on each side of this ridge, the declivity is very rapid, terminating on the right in the Cowgate, and on the left in the North Loch. Houses have been built on every part of these precipices; for I can call them nothing else, and the principal entrances into them are by common passages from the street. That part of the street immediately over the North Loch, is about 140 feet above the level of that drained morass, which divides the New Town from the Old.

The situation of the Cowgate, which runs parallel to the High Street, immediately at the bottom of the opposite precipice, is very low, and, according to the early historians of Edinburgh, was once the seat of a canal or

river ; this, however, from the general declivity of the ground, does not seem probable.

From the top of the ridge above-mentioned, narrow lanes descend on both sides called *Closes*. Many of them are extremely steep and difficult of passage, and their width rarely exceeds six feet. Those of larger extent, and which admit of a carriage, are called *Wynds*.

From the local situations of these places, we would not be apt to expect great purity of atmosphere, and if we did, we should be grievously disappointed.

In the year 1504, we are informed, the tract of ground to the southward of the city, called the Boroughmoor or myre, was totally covered with wood, though it now affords no vestige of its ever having been in such a state. The quantity, however, was at that time so great, that the town-council enacted, that whoever should purchase as much of the wood as was sufficient to make a new front to their house, might extend it seven feet farther into the street. The effect of this was such, that in a short time, Edinburgh was filled with houses of wood instead of stone ; and the principal street, the beauty of which consisted in the height of its

buildings, and its spacious width, was reduced 14 feet in breadth.

The city of Edinburgh was in early times surrounded by a high wall, which was reared for its defence. From the great extension of the city, however, since that period, the remains of this wall are in many places almost in the middle of it.

Edinburgh is supplied with excellent water from the neighbouring hills, whence it is conveyed in aqueducts, and distributed to every family in leaden pipes.

The principal reservoir for supplying Edinburgh with water stands on the top of the north side of the High Street, and, from its elevated situation, affords an easy conveyance to the level of any part of the town.

An inexcusable act of the town-council was the late order, that the lead pipes for conveying the water should be dug out, and sold for the purpose of a present supply of money, and cast iron and wood ones, which require almost constant repairs, substituted for them.

The markets of Edinburgh, which may best be brought under this head, afford all the necessaries, and many of the luxuries, of life in considerable variety.

The vegetable market is supplied, on the most reasonable terms, with every sort of

herb which is to be found in this part of the island.

All kinds of poultry and game are to be had in great plenty.

During the spring months, our butcher market is plentifully supplied with veal and lamb of most excellent quality ; in the latter end of summer and autumn with beef and mutton of very superior quality ; and in winter with pork. Venison, also, is sometimes to be met with, but not often.

The above are the seasons for these different animals, though they are to be met with throughout the whole year ; but being then fed on forced meat, such as the refuse of distilleries, &c. they are never so good.

The best beef which is brought to Edinburgh is the Highland stott, when not killed until four or five years old, having a fine flavour, and being tender, and much firmer in the fibre than the low country or English breed. The Highland mutton, also, is preferable to any other. The white-faced or English breed of sheep, are generally killed when young, at about 12 or 14 months old, at which time their mutton is coarse, produces only a white gravy, and when these animals are fed to two or three years, they become monstrously fat.

The fish to be had in the market are salmon from December to October; common trout and sea trout during spring and summer; and spirling during March and April, at which time they ascend the river Forth in millions. Pike, perch, and eels, are very common, the last of which are not much demanded. The supply of cod and haddock is almost uninterrupted. Ling is less common than cod, and sells at higher prices. Whittings are very common, and, in autumn, are often of a large size. A shoal of pilchards generally precedes the herrings, and are to be found in the market in October and November; after which herrings set in and continue till March. In May and June vast quantities of sprats, or garvey-herrings, are brought to market. Mackarel are sold during summer, but seldom in large quantities. The sea cat, or wolf fish, is not uncommon in the market, but is often despised on account of its name by those who do not know its excellence at the table. The male lump-fish, or padle, is brought to market in April and May. The female is not eatable. The supply of flat-fish is copious. Holibut and turbot are pretty common during the summer. Soles are rather rare, and of a small size. Plaice, dab and flounder, are to be found in the market almost every day in

the year. Skate is in great plenty during the summer. The sturgeon, wasse, and saury pike, are scarce. Sand eels are common during the summer. Lobsters and crabs are very plentiful, of which the male are the best in spring, the females in the end of summer. Oysters are to be found in the market in great plenty from 1st September till the 1st of May. Prawns are in great plenty, and also a numerous list of small shell fish of other descriptions.

CHAP. II.

OF ARTIFICIAL CAUSES.

SECT. I.—*Of the Construction of Houses in Edinburgh.*

To prevent the great devastation which had frequently been made by fires in James I.'s time, no houses within the borough were

allowed to be built more than twenty feet high, and, in general, they were covered with thatch or broom. Even about 1553, many of the churches were covered with thatch; and it was found necessary in 1521 to prohibit, by act of Parliament, all board, thatch, and broom roofs within the city, and to order that houses should in future be covered with tiles, slates, or lead; and in 1577, in addition to the above, it was enacted, that instead of houses being built of wood, stone was to be used, under the penalty of 500 merks, and the houses of the offenders being demolished.

Almost all the houses about, and previous to, this time entered by a common stair, and many of them were twelve stories high, every floor separately inhabited by different families. Their beds were commonly like a large chest, or box, which shut in the front with sliding doors. The above custom of roofing the houses, and of employing these box beds, is still very common in many parts of our island, particularly in villages and country towns.

The meanness of the houses in Edinburgh, however, does not seem to have arisen from the want of knowledge of masonry, but from ignorance of every refinement in domestic life.

It may be observed, however, that probably another cause operated in the construction of these houses, particularly respecting their situation. I allude to the turbulence of the times, when they were obliged to live near the castle for protection from that fort; and it is probable, also, that the vitiated taste in these and many other matters, which followed these times, entirely originated from, and was propagated in consequence of, this single circumstance.

In 1801, when the population of Edinburgh was taken, it amounted to 82,560; but it is generally allowed that this was even then much within the number. Since that period, however, the population, with the extent of the city, has greatly increased, and now, I have reason to believe that it considerably exceeds the above number.

The houses of Edinburgh, as they now stand, particularly in the principal part of the old town, seem to have been thrown deeper in the ground by artificial mounds of earth, which probably have been cast into the common passages to render their declivity more gradual. Consequently, many of the houses, at this moment inhabited, are more completely buried under ground than when they were first built.

The construction of the houses in the Cowgate seems ingeniously adapted for the propagation of disease, and these, joined to the original dampness of the place, render it necessary for the inhabitants to breathe an air impregnated with disease and death. The apartments are in general small, and huddled together in an astonishing manner. Several of the houses on the opposite side of the Cowgate from that declivity which leads from the High Street, are also less or more under ground. Although in general they are not so conspicuous in that respect as many which may be pointed out in various other parts of the city, their absurd construction internally, with the large families that are crammed into them, completely divests them of any advantage they may possess over those houses which are almost sunk in the earth.

The back of the houses constituting the High Calton rest upon the Calton Hill, so that the whole of the backs of many of them, several storeys in height, are completely buried under ground. The water and filth which descend from the hill is often collected there in great quantity when the common sewers, which is very commonly the case, are in a state of disrepair. These sewers, even when they are supposed to be in per-

fect order, are made, in some instances, to descend through the very stairs by which the inhabitants pass to their houses. To attempt, however, to give a description of the internal appearance of these, and many such houses of this city, where large families are brought up, would be a very painful and difficult task. Indeed, I question if any description could convey an accurate idea of the scenes of extreme misery which the wretched inhabitants are every day obliged to endure in such places. Often ten or more individuals are crammed into one very small apartment, where they sleep, cook their victuals, and exist almost constantly, except that part of them whose occupations require their absence from these haunts a few hours every day. Thus they are obliged to live without having it in their power to breathe any atmosphere, particularly during the night, but such as has been previously in the lungs of some of their fellow lodgers. In this way the poor miserable wretches exist often without a murmur, partly from the narrowness of their circumstances, and partly from their being unconscious, from habit, of the existence of a better situation.

There are, indeed, few parts of this city where under-ground houses to a greater or less extent are not to be found. So accus-

tomed are thousands of the inhabitants to live in these places, and so filthy have they become even in their very nature, that I know it would be a difficult task to convince them of their unhealthy situation. I have often remonstrated with them on the impropriety of living in such hovels, and they were even perfectly astonished at my extreme ignorance. They frankly acknowledged that many of their children, and other of their relations, die; but this they contentedly attribute to a "a greater power than they can contradict." And in order to prove the impossibility of such places being the cause of disease and death, they recounted a few solitary instances of long life which have perhaps occurred in their family, or in that of their neighbours. Thus stubborn prejudices, ignorance, nastiness, and poverty, seem very intimately combined, and, consequently, reasoning with such beings will never have any rapid effect in amending these faults.

The decided advantages which the New Town possesses over the Old must be evident to the most common observer. The free ventilation which can be commanded in every part of it, the wide streets, and the lofty well built airy apartments, are all advantages which it possesses in a very supe-

rior degree to the old town ; indeed, I believe, to any town in the world.

From the very superior situation, then, of the New Town, it might reasonably have been expected that the inhabitants would in time have withdrawn themselves to it, and have deserted the underground unhealthy apartments in the Old Town. But, instead of attempting to profit by this advantageous local situation, the proprietors are daily propagating the very evil which they ought to have avoided. In many even of these buildings, underground houses are adopted to a very great extent. I may particularly mention that range of houses about the head of Leith Walk, on the side next the Old Town, where a number of houses are built with four storeys in front completely underground, and in the back perfectly free. Still many of the front rooms are used for sleeping apartments, which ought to be completely prohibited. I would indeed propose, as a general rule in every place, that in no instance under-ground apartments should be appropriated to the purpose of sleeping in, however dry a situation that apartment may seem to be. I have made very minute enquiry respecting the comparative number of deaths that for several years past have taken place in houses with their sleeping apart-

ments under ground, and others with them above it, and I find, that the mortality probably caused in consequence of the sleeping apartments being under ground is incredibly greater than takes place where they are above it. A variety of families in Edinburgh have even remarked an evident decline in their health from the time they inhabited underground houses. In some houses, on the contrary, which I could point out, the superincumbent earth has been removed, and diseases which existed in them previous to this have disappeared.

In the construction of the principal part of the Old Town of Edinburgh, common sewers were neglected, and the inhabitants emptied all manner of filth into the streets over night. It was then barely excusable ; but now that this objection is, in a great measure, removed, independent of all our laws for the internal management of our city, to find similar practices persevered in, is shockingly disgusting and highly disgraceful. None can walk the streets of the Old Town in the morning and evening without being almost suffocated. In the New Town, however, no such practices are known.

It is but just, however, to remark, that the various hospitals erected for charitable purposes have of late years undergone con-

siderable changes for the better, both in their external and internal construction. The directors or managers of these hospitals are entitled to much merit for having directed much of their attention to the cleanliness, modes of living, and the strictly religious and moral conduct of their inhabitants.

The local situation, as well as the internal arrangement of Bridewell, which is built on an elevated situation on the Calton Hill, seems, in every respect, much better calculated to the comfort and health of the prisoners, than any building of the sort in this city,—perhaps in this country. Instead, however, of glass windows, liable to be shut by the prisoners at pleasure, they ought to be left completely open, during all the summer months, by the entire removal of the glass ; and these openings ought only to be shut during the cold months of winter. The rooms are large enough, if the windows are kept open, but too small to be kept shut in summer.

Our want of a well-aired prison must have been severely felt by many. The one, however, now building, *if carried into execution*, must be a great amendment. Still, independently of every other internal advantage, its situation must be against it, as suf-

sufficient supplies of fresh air cannot be procured. Certainly a prison may be easily constructed on *Inchkeith*, in the Frith, for those who may have committed capital crimes; and one for debtors, &c., may be placed in the suburbs, perhaps near Bridewell, both of which would be of great advantage in preserving the health of those who had the misfortune to be confined in them.

No prison ought to be in the very heart of a city. As most of the diseases in these places originate from want of pure air and sufficient exercise, improper diet, depression of spirits, exposure to cold and uncleanness, it is evident that the prevention or the removal of these ought to be our first object.

Prisons ought to be built on a piece of sloping ground which should be dry, and, which at all times may be done, sufficiently elevated to admit of the fresh breezes through it. Thus situated, the wall surrounding it may be sufficiently high, and yet it may not in the least impede the free circulation of air.

In these places, subterraneous dungeons are quite unnecessary, and, being highly injurious to health, ought never to be constructed.

Every cell and room in them ought to have two windows opposite each other to admit of their being more perfectly ventilated. The courts should be large, and paved with broad stones.

The exercise best suited to prisoners, is walking, and working at some sort of employment. Money obtained for such labour ought wholly, or in part, to be given to the prisoner as an encouragement to industry.

Were my power as great as my wish, I should decidedly protest against every alteration in any part of this or any other city, where improvements were more calculated rather to prevent than to accelerate ventilation. One instance of this kind I may adduce in the present alterations taking place in the Parliament Square, which may be useful in collecting a little more money to the public revenue ; but must be proportionally prejudicial to the health of those situated in its immediate neighbourhood.

It is not to be wondered, that in close confined houses, situated in narrow streets or lanes, diseases of the very worst kind are to be found, when houses, constructed on the same absurd principle, although actually situated in the best ventilated parts, are equally productive of the most malignant complaints. To adduce a variety of instances

in support of this assertion, would be unnecessary. I shall point out one, which will serve as a very clear proof of it. It, externally considered, is as freely and openly exposed, as any other house in this neighbourhood. I allude to that house which stands on the south side of the King's Park, upon the brow of the declivity which terminates Salisbury Craggs. To the front, it stands in an elevated situation, the ground floor being considerably above the common level of the ground almost immediately in front of it. The back of the house, however, the declivity being extremely rapid, is completely under ground, and the hill suddenly ascends behind it upwards of 100 feet. The floors and walls, particularly to the back, are consequently damp, and the greater part of the inhabitants are, at least nine months out of the twelve, affected by some epidemic disease ; sometimes of one sort and sometimes of another ; but which are all evidently occasioned by the circumstances which I have stated above.

By the bye, I may mention one other probable cause of this extraordinary sickness. Upon the west side of this house, only a few yards distant from it, there exists one of the town's reservoirs for the collection of filth, which must tend greatly to vitiate the air,

and consequently produce disease. It is also known, that the inhabitants of the other houses in the neighbourhood are much more unhealthy than others who are not so much exposed to the effluvia of such masses of corruption. Their houses, however, are level with the ground, and they are not so unhealthy as the inhabitants in the house situated on the brow of the hill. Two causes operate in this last; viz. effluvia from the filth, and the immense mass of ground in the neighbourhood rendering the rooms continually damp. On the inhabitants of the other houses, it must be the effluvia alone which causes the great sickness continually existing among them.

I could compare this house first described with another house similarly situated in regard to local circumstances; but not nearly so well ventilated without. That to which I allude, is the house lately built by Mr Wordsworth at the foot of the Calton Hill; the ground before as well as behind it, is nearly similar to the one I first described, and even although it is not nearly so well ventilated externally, the drains that he has ingeniously caused to be constructed between the ground behind the house and the house itself, sufficiently serve the purpose of preventing any kind of dampness in the rooms; in conse-

quence of which no disease has been known in his family, although the house is new, and he has inhabited it for four years.

Did such laws exist for the regulation of dwelling-houses as have in some instances been established for the removal and prevention of external nuisances, many of those habitations which now stand as monuments of the absurdity and grossness of taste of ancient times, would be appropriated to uses for which they are only calculated; and I have no doubt, that in a very few years, we would experience benefits equally great with what we now possess to what the inhabitants of this place did a century ago.

It is strange, that in every part of this kingdom, these shocking hovels should still be suffered to exist. We know to whom we ought to look for such amendment, and at whose command they can be instantly be made. Were it a mere matter of convenience to the inhabitants, and only serviceable in gratifying their luxury, the fault would not be so great; but the health and lives of thousands of individuals are constantly at stake by such omissions being persevered in. The health of individuals in every nation must be of the greatest importance to its prosperity and independence; and were I allowed to make any distinction, I would at

once pronounced, that the health of the lower orders of the people is of the greatest importance. It is from them that both our army and navy, the supports of our country, receive their supplies, and consequently, it is to them that the higher orders of society owe their liberties and their privileges. It is therefore not one of the least of the duties of our government to exert some of its influence to prevent that part of the community from having their constitutions blasted by such sources of contamination, and the original vigour of their minds destroyed by diseases, which, for the most part, can be so easily prevented.

SECT. II.—Occupations in Edinburgh.

There are no occupations followed in Edinburgh, more particularly destructive in their consequences to those employed in them, than those which I have already mentioned under the head of occupations in general.

I may observe, that no occupations in general seem so particularly destructive in their

consequences to those immediately and constantly employed in them, as upon those who are occasionally exposed to their influence, or to the influence of those effects which exist in consequence of them.

There can be little doubt, however, that all occupations, where it is necessary from their nature to deprive those employed in them of many hours daily exercise in the open air, such as printing and engraving, particularly if the offices are closely built, or under ground,—the employment, too, of the various classes of persons connected with the law,—must, from their confinement, be highly injurious to the health.

The principal manufactories, which less or more influence the health, are distilleries of whisky, breweries, particularly for ale, and manufactories of candles and soap.

Making of whisky is carried on to a very great extent, and here, as in most other parts of Scotland, is used very profusely, tending greatly to injure the health of particularly the lower orders of society. Our ale is perhaps superior to any in Scotland, and it were well that this wholesome beverage were substituted for the destructive use of whisky. But it is rather from the *drinking*, than the *making* of these beverages, that the manufacturers become injured.

SECT. III. *Modes of Living in Edinburgh.*

In proportion as civilization advances in any country, it would appear that the modes of living of its inhabitants, at least of that part of its inhabitants who more immediately fall under the influence of such changes, become more refined.

We find that, in Edinburgh, about 1598, the victuals even of the nobility were of the coarsest kind. They consisted chiefly of oat-meal cooked in a variety of ways, and their drink was pure wine. The better sort of citizens lived much in the same way; only their drink was chiefly strong-ale of their own brewing, of which they drank amazing quantities. Both sorts of people always drank to much greater excess than the English.

The modes of living of the present day among the poorer classes of the people, who always constitute the greater mass of society, are in general no better than in the earliest periods of our history; in some instances perhaps they are much worse.

Among them, the food is in a great measure composed of oat and pease-meal, prepared for use in a variety of ways. The first of these, when gradually mixed with water and a little salt, and boiled in a pot over the

fire constitutes *porridge*; and the other forms which this may, in common with the pease-meal, be put to, are *brose*, *scones*, or *bannocks*, and *cakes*. The *brose* is formed by a quantity of meal with a little salt, which is put into a dish, and while one person stirs it, another, or perhaps the same person, pours boiling water upon it, till the mess becomes of an ordinary consistence. This and the *porridge* are eaten only while warm, and are used, often in amazing quantities, with milk or beer. The *scones* or *bannocks*, and *cakes*, are formed by the same kind of meal, kneaded with water and a little salt, and toasted over or before the fire. These are used cold as a substitute for loaf bread.

There is another curious dish peculiar to the country, composed partly of oat-meal, called a *haggis*, which was once much more used about this place than it is now: It is however still retained among certain classes of people. Many improvements have lately been made upon this dish, and it is now made in a variety of ways; but the true *Scotch haggis* is composed of oat-meal, animal-fat, a pretty large proportion of onions, and pepper and salt in considerable quantity. These are mixed together and put into a sheep's stomach, which is sewed close, and

the whole is boiled among water. This dish is used only while hot.

The lower orders of people, too, consume immense quantities of the intestines, heads, feet, and other refuse of killed animals, for which the superior orders of society can find no use. To see these lean and naked wretches hovering about the shambles, watching to pick up any such apparently useless morsels, is most humiliating, and extremely painful to those who are capable of feeling for the unfortunate, and pitying the distresses of that neglected, but numerous part of the community.

The modes of living among the higher orders of society, I mean those who take a pleasure in making regularity a part of their duty, is extremely proper.

Among all sorts of people, the greatest injury sustained to the fabric is more in consequence of the use of often very bad spiritous liquors, than by eating any kind of food, although, in many instances, the victuals are coarse enough.

At every period of the year, stomach complaints are here very common; but I have always observed, that, from one to three or four months after the commencement of the year, when, according to the absurd custom of this part of the world, drinking is a spe-

cies of irregularity too common among us, these complaints are always more frequent and more obstinate, than at any other time. Indeed, the immoderate use of ardent spirits in this country is much too common ; and I will venture to say, that this is productive not only of stomach complaints, but of, perhaps, the greater proportion of diseases that come under the care of the physician.

Although dyspepsia, in its most distressing and obstinate form, is almost always the first effect of this practice, it is soon followed, if the habit be persevered in, by an almost complete and irreparable derangement of the digestive organs.

Those unaccustomed to live in a country, and among people who use such immense quantities of ardent spirits, as we are in the habit of using, are apt to imagine that, after the continued use of this destructive potion, they are at last destroyed by the almost immediate effects of one of their doses ; but this is not the case, for, with us, where I am sure there is more ardent spirits consumed than in any other part of the world, it will be found, that an amazing number of lingering, yet fatal, diseases are produced by the use of it ; and where one person suffers immediate death by this means, many thousands drag out a miserable existence. The

opinion, that ardent spirits destroys the individual suddenly, will be found to be formed not according to the fact, but according to the opportunities the practitioner has of seeing, perhaps, a few solitary instances of sudden death from apoplexy in consequence of drinking.

It has frequently been urged by authors, and others, that particular climates, or particular states of climate, render it necessary for the inhabitants to use spirituous liquors, and other substances, to prevent the bad effects of these climates from producing disease among them. This is a very indefinite way of going to work, and, in my opinion, is frequently productive of much harm. In whatever country a person may be placed, if he enjoys good health by attending to that moderation both in eating and drinking, which preserves his mind in its greatest vigour, and his body in its greatest activity, he requires no assistance from spirituous liquors, which, if persevered in, under the above circumstances, must sooner or later be productive of much injury. But if the health is likely to be injured by the particular local circumstances of any country, properly regulated indulgencies in these things may be made. Still, however, these will afford but temporary relief, and it will be

better for the person to change that for a country more congenial to his health.

SECT. IV.—*Manners of Edinburgh.*

The manners of the people of Edinburgh are certainly of late much altered for the better. Since this city has become the seat of affluence and fashion, the intercourse of society has greatly contributed to the removal of that want of polish which our southern neighbours, for instance, deemed, perhaps justly, very unpleasant.

In these earlier periods, even the politeness of the people was, to those unaccustomed to it, particularly distressing. During dinner, or at any other meal, or while partaking of refreshment of any kind, their insisting on strangers in particular to continue to eat or drink, after the accommodating disposition of the person had even carried him farther than he wished, was extremely teasing and disagreeable. I have even been informed of these good people conceiving themselves highly injured, if, by the exuberance of their kindness, they did not first surfeit their visitors at dinner, and

complete the scene by making them notoriously drunk before they parted. Among certain classes these customs are still in excellent preservation ; and even while, in comparing them with others of a more modern date, we do not entirely approve of them, yet we do not feel disposed entirely to blame such manners, when we reflect upon the generous motives which give rise to them.

The manners, on the contrary, of the more modern, particularly the higher classes of society, are often extremely elegant, in whatever situation they may be viewed. The introduction of the other improvements among them has, in a great measure, removed in every class that sheepish reserve, which, in earlier times, was very conspicuous.

Still, however, the females possess a sufficient portion of modest reserve, and dignity of demeanour, which, when added to their other charms, render them excessively interesting, much more so, perhaps, than is to be found among their southern neighbours, where the continual routine of luxury has entirely rooted out their genuine feelings, and substituted for them that senseless familiarity, and formal pertness, which never can touch the heart. In short, in

personal qualifications the one often surpasses the other as far as the natural blush of the rose does the tawdry trappings of artificial colours; while in mental acquirements in the one we witness nature under the well regulated influence of good sense and modesty; in the other, her voice is sometimes diminished, and there is substituted for it the short lived blazon of artificial acquirements, which rather astonish than please.

The general regularity of manners which prevails in the metropolis of Scotland has been remarked by every stranger. No city in Europe contains so large a proportion of men of an enlightened and of a polished character; or a body of common people so well educated and respectable.

In many respects, then, the manners of the inhabitants of Edinburgh have, for these two or three centuries past, improved very much. In some, however, particularly among the lower orders of society, the alteration since that period is very trifling.

The common filth and nastiness in and about the city of Edinburgh have been proverbial all over Europe from the very earliest periods of its history. To this we are warranted to attribute many of those disastrous epidemics formerly known under the name of the plague, leprosy, &c. which in

early times committed such ravages among its inhabitants.

After the defeat at Flowden, in 1513, the plague, as it was called, raged with great violence in this city, carrying off immense numbers of its inhabitants. Acts of council were instantly passed, ordering various measures for stopping the contagion, but they seem to have been attended with very inconsiderable benefit; probably from their being of too limited a nature, or because their full import was not acted up to. As a solitary proof of the vitiated taste which must have been prevalent about the year 1553, an act of common-council was then made, prohibiting all dunghills from being made on the principal streets; and it was, at the same time, ordered, that swine should not feed or live upon these dunghills.

This disease, then, visited the city at various periods; but, since 1645, it has not made its appearance. The mortality at this time, however, was very great, as by it the city was almost depopulated. The alarm was so great, that prisoners confined for debt were liberated; and one Dr John Politi-us, a foreign empiric, the only person who would attend the sick, received for his attendance 80l. Scots per month.

Bad as we may conceive these nuisances to be at present, they must in earlier times have been much more horrible. Permanent sources of nastiness, and consequently of disease, do however, still exist in a very considerable degree ; and those who have been absent from Edinburgh for a number of years, remark, that however rapid we have been in improving our city in other respects, we have been sufficiently tardy in the removal of the causes of filth and nastiness. This is shameful. Why is there no fine inflicted on those who transgress in this way, and a person appointed to see it regularly collected ? A few years of such strict attention would render these measures unnecessary. The manners of the people are daily altering for the better, and, unless among the lower orders of society, to which such measures alone could apply, no such scenes as I have alluded to are to be found. With some of them, indeed, something more than mere attention to their manners is necessary ; for, in several instances, from the extreme wretchedness of their habitations, partly in consequence of local situation, it is beyond the power of human art entirely to improve them in respect to cleanliness.

Nuisances exist among the lower ranks, which by them are never complained of, or

attempted to be removed ; and it is to these that the police of our city ought principally to attend. They vitiate the air which the lowest inhabitants are, in common with the first ranks in society, obliged to respire every minute of their lives. I am sensible that, in many, this does not immediately, or perhaps not at all, produce disease ; but surely it must neither be a very pleasing, nor a very cleanly reflection, that substances constantly emanating from such masses of filthiness shall be suffered to have a free passage into the lungs with every breath we draw, or every morsel we eat.

Tamely to submit to such nastiness, is an act of indelicacy, which nothing but vile custom could sanction, and none but those who are only cleanly by stealth could submit to. Every means, therefore, in the power of those who possess fortune ought to be exerted for their removal ; and I hope, in this respect, I shall have less reason to complain at every future period of my existence than I have at this moment.

CHAP. III.

Inflammatory diseases are most frequent in this part of the country, particularly dur-

ing the winter months. These appear in various forms in different persons, according to the particular state of their system at the moment, the nature of the season, or their local situation. The most immediately fatal to life, however, seem to be pneumonia, (see vol. i. p. 229.) Catarrh (see p. 227) is more common, but is of itself not so destructive of life. Various other inflammatory diseases prevail amongst us, such as inflammation of the bowels, &c. &c.; and among children hydrocephalus is very common.

The consequences of these complaints, which usually exist most plentifully during spring and summer, are dropsy in various forms, (see page 247.); effusion into the ventricles of the brain, (see page 238.;) leucorrhæa, (see page 252.) &c. Stomach complaints, (see page 269) particularly among those who indulge freely in the use of ardent spirits, are very common; and typhus fever (see page 254) is never absent throughout the whole year, but is particularly severe during the summer months.

There are, indeed, many other very generally prevailing complaints, but these being the most formidable, I have found it necessary to confine myself to a brief consideration of them and their effects.

PART II.

POLICE FOR THE CAUSES OF DISEASE IN
EDINBURGH.

CHAP. I.

POLICE FOR NATURAL CAUSES.

SECT. I.—*Police for Soil.*

THE celebrated Dr Cullen, from observing the effect of the effluvia arising from marsh miasmata, founded his doctrine of fever, upon the supposition of such effluvia being the principal cause of such diseases. He applied his doctrines to this very city, and adduced local proofs so strong in favour of them, that even had they been advanced by one of ordinary reputation, more attention ought to have been paid to the removal of such causes. But, after the opinions and observations of such a man, their exis-

tence being permitted, where human art and industry could easily remove them, is an act of guilt on the part of those who have the power of ordering such amendments, and their breach of duty to the community is consequently too evident to require any illustration on my part. Besides, in neglecting those measures, so evidently calculated to the preservation of the public health, they insensibly create for themselves and their families, numberless chances of being infected with epidemical diseases, which might entirely be prevented by proper attention being paid to the removal of the acknowledged sources of them. In this point of view, the only one, in my opinion, which can be taken of it, they, without due consideration, daily expose themselves to those chances of disease, which, from their carelessness and inattention, the labouring part of the community are exposed to.

The soil of the Meadows of Edinburgh, in particular, will, however, soon be improved, as the Magistrates have already begun a drain from them toward the sea. This, certainly, ought to be done with regard to all those places similarly circumstanced, which may be contiguous to the city, and that in the most vigorous and effectual manner.

The effect of growing vegetable matter, also, in purifying the atmosphere, is well known. In London, every opportunity of planting trees and shrubbery is taken, and this, while it adds to the beauty of many of their squares, &c. contributes very much to the health of the individual. Although the situation, population, and extent, of this city is not to be compared to London, and although, at present, almost every public street, &c. particularly in the New Town, is thoroughly ventilated, yet the rapid extension of buildings on every side of us, will soon render them much less so. But although the free ventilation, from the elevated situation of the New Town, should not be in the least impaired, the beauty of the place must suffer considerably from the omission of such plantings. And what renders this more blameable, the mere direction of such an improvement would at once be complied with, and, I dare say, willingly paid for, by the proprietors and inhabitants.



SECT. II.—*Police for Climate of Edinburgh.*

Although ventilation has probably no remarkable effect in decomposing noxious

effluvia, yet certainly, situated as Edinburgh is, upon a considerable eminence, it is of very great importance in wafting it to a distance from the abodes of the inhabitants. Whatever, therefore, tends to promote ventilation, particularly where it is most necessary, must be of the greatest service *. In every improvement, therefore, or in adding to the extent of Edinburgh, this object ought to be particularly kept in view; and certainly the more frequent the intersection of streets, &c. in every situation, but particularly in the lower lying places, is an object which cannot be too much attended to.

Our next object is to purify those parts where ventilation is not so practicable; and certainly, according to Dr Priestley's experiments, the *willow plant* is so efficacious in purifying foul air, we ought to have it plant-

* I have no hesitation in asserting, that the *Wynds* and *Closes*, as they are called, have, in the Old Town, been often, in this respect, of much use. The circulation of air through them, during the high winds which prevail here, is very great, and must, though unobserved, have contributed greatly to the prevention of disease.

ed in all situations where its growth may be most necessary.

SECT. III.—*Police for Situation of Edinburgh.*

There is perhaps no city or town in the world better calculated, from its local situation, than Edinburgh, to be almost perfectly free of every degree of filth and nastiness, and consequently of the diseases resulting from these causes. From the Pentland hills to the Frith of Forth, it forms a gradual declivity; and although much irregularity of surface exists in the intervening space, yet neither lake, marsh, nor collection of filth, ought to be known as a nuisance, as, with a little expence, and no very great labour, it may be conveyed to such a distance from the city as to be completely beyond the reach of either destroying the comforts, or affecting the health, of the inhabitants.

These advantages, from the general local situation of Edinburgh, are much neglected, and stagnant waters, occasioning putrefaction, at all times unpleasant, and, during the summer months, in particular, productive

of disease, are suffered to exist in various parts of our neighbourhood:

Private individuals can do little in these matters; it is therefore to be expected, as an act of great humanity, as well as of self-preservation, that our present magistrates will no longer suffer their own, with the health of the community, to be thus contaminated.

Although, from the particular nature of our climate, we run less risk of being affected by diseases from putrefaction, than in those where greater heat exists, and where moisture, which assists in the dissemination of contagious effluvia, at certain periods of the year abounds, yet we know, from experience, that we are not wholly exempt from them. The internal police of every city and town ought therefore to be vigilant in the detection and removal of all such sources of disease.

There are, almost immediately eastward of the city, collections of filth, chiefly from the termination of the common sewers, which contaminate the atmosphere, particularly during the prevalence of easterly winds, and their effluvia are immediately wafted into the very houses of those who inhabit that part of the suburbs, must

prove highly injurious both to the comfort and health of those inhabitants who live near it. These may be entirely removed, by carrying the drains which convey the filth of the city to a greater distance, so that the putridity of those parts, greatly increased by the heat of the summer, may be far enough removed to prevent the contamination of that part of the atmosphere which the inhabitants must of necessity breathe. In their present state, during stormy weather, the gross particles of filth are even blown into the faces of the inhabitants.

With regard to the internal management of those nuisances which exist within the city, much may be done in the way of improvement. Most of them admit of it, and many of them may be entirely dispensed with.

The establishment of the flesh and fish markets is very properly made in a central situation ; and when these are kept properly in order, no contamination of the surrounding atmosphere can arise from them. This, however, particularly in the latter, is not attended to, as every one must have felt who walks along the North Bridge. But that the shambles should likewise be placed there, will appear to every

one highly improper. I think I need only point out this circumstance, to convince all unprejudiced persons of the great necessity there is for some alteration being adopted in this department of police. At all times of the year, but more particularly in the summer months, every one passing along the North Bridge must also have acquired a most perfect experience of this mass of putridity, which, when accompanied by the effluvia arising from the contiguous refuse in the fish-market, is truly horrible, and must, in particular, be highly prejudicial to those inhabitants who occasionally reside in the immediate neighbourhood of them.

Those, however, who are more immediately, and, from their business, more constantly exposed to the action of effluvia from such masses of putrid animal matter, as from necessity must always be present in the shambles, do not, in general, suffer materially from its effects. It must be allowed, however, that their frequent witnessing such scenes of cruelty as are constantly exhibited there, must harden the heart, and destroy every benevolent feeling.

It is well known, that those accustomed to blood and slaughter, and to behold the pangs and agonies of death, even among brutes, not only view them without con-

cern, but with ease and satisfaction. This has at length a tendency to harden the heart, and to obliterate every tender feeling. There is not a more undoubted truth than this. The removal of this nuisance ought, therefore, by common consent, to be made to the suburbs of the city, where it can less affect either the health or morals of the people.

Instead of this, however, I am sorry to see that an addition has lately been made to this building, which, while it will cause an extension of the putridity, must vitiate the atmosphere, and consequently cause disease.

With a little more attention to the internal police of Edinburgh, it might certainly, from its local situation, be made not only one of the most cleanly, but one of the most beautiful cities in the world.

I by no means approve of planting immense masses of wood in the immediate neighbourhood of any city, but surely a sufficient quantity to make it a little more picturesque, and thereby take from its fields that sameness which fatigues the eye, is extremely proper, particularly when fields can be found, appropriated perhaps to no other use. There are, for instance, several parts on Arthur's Seat and Salisbury Craigs, where small plantations might be made, of

one highly improper standing as it might point out this circumstance the particular situation of the place. Neat and comfortable apartments should be made on the Meadows, and in all months, every one should be able to frequent these places. To these might be added the accommodation of a theatre, which, when the prospects which from the mountain may be commanded, is the most beautiful. For nearly an hundred years, the view is picturesque.

These improvements which I have suggested, would be complete. Some of the most important as the erection of seats on the hill, and in the King's Park, &c. some years ago; these, by degrees, were carried off, or otherwise destroyed by blackguards. But if such improvements shall be again made, this, and every kind of irregularity, may be removed, by placing centinels to traverse the park similar to what is done in the City of London. These men,

by, are in general too idle, and nothing but duty prevents them from working mischief.

CHAP. II.

POLICE FOR ARTIFICIAL CAUSES.

SECT. I.—*Police for Construction of Houses in Edinburgh.*

IN all large cities, streets intersecting each other at small distances ought to be adopted; by this means, ventilation would be more perfectly performed, than where such measures are overlooked, or where ventilation is more owing to accident than design. No crowding of houses, therefore, ought to be permitted; but a space should, on the contrary, be left between each, and this, with the frequent intersection of streets, would contribute much to the ventilation of the city.

The inhabiting of cellars, in which a great proportion of the lower classes dwell, immersed in darkness, and in filthy and damp situations, where they breathe impure, stagnant, and enfeebling air, ought to be altered or entirely prohibited.

On a hasty consideration of this subject, it might appear proper to prohibit all houses of the above description from being occupied at all ; and indeed, although this would, particularly to the proprietors, seem rather a severe decree, yet it certainly would be the most effectual in promoting the public welfare. Another view of the subject may be suggested, which will appear less severe, and at the sametime perfectly practicable, without either the country or individuals suffering very severely.

These houses might be purchased by Government at a very reasonable price, and there would be few of the apartments but, by their direction, might be rendered fit for some use or other, such as cellars, store-houses, &c. ; and these being let at a moderate rent, would produce good interest for the purchase-money.

I am aware, that the present proprietors would most pointedly object to this proposal ; for their views being in general of a more contracted nature, they are perhaps

little interested in the health and comfort of the community in general. The rents they derive from letting these miserable habitations, are often very great, frequently from 20 to 40 per cent. for their purchase-money ; and I have even been assured of its going considerably beyond this. From political motives, however, Government ought to adopt such means as seem most beneficial to the nation in general ; and their next consideration ought to be, how the individuals that may have suffered during the fulfilment of these plans, are to be compensated. The propriety of this will appear at first sight ; indeed the health of individuals in any country is a paramount and most important consideration.

An improvement in the external structure of houses in Edinburgh, seems to me much wanted, and one which may be made with little or perhaps no expence to the proprietor. I allude to the building a small parapet, similar to those used in London and elsewhere, rising a foot or eighteen inches in a perpendicular direction with the side-wall of every house above the termination of the roof where it joins the side wall. Thus, slates, pans, or loose stones, would be effectually prevented from falling upon the streets, which, during the violent hur-

ricanes with which we are often visited, is a very frequent occurrence, endangering the safety of the inhabitants. Besides, in the present state of these roofs, there is nothing more painful to a feeling mind, than to observe upon them slaters or chimney-sweeps working at their professions.

Mr Nasmyth, landscape-painter, I may mention, has suggested some very ingenious plans for the improvement of the city of Edinburgh, which, if carried into execution, would certainly not only add much to the beauty of the place, but contribute in no small degree to the health of its inhabitants.

The object he seems to have in view, so far as health is concerned, is the more frequent intersection of streets, which would greatly contribute to the ventilation of parts where from their present state, that process is totally impossible, at least in such a degree as to render them tolerable. He has suggested many plans which would render even the Old Town of Edinburgh perhaps equal, if not superior, in beauty to any other in the world.

SECT. II.—*Police for Occupations in
Edinburgh.*

All manufactories which prepare and employ largely animal or vegetable substances in a putrescent state, should be prohibited in populous towns.

I may particularly point out the following, the existence of which are not only a great nuisance to those inhabitants who live in the neighbourhood of them ; but, from their vitiating the atmosphere, must be prejudicial to the health in a very considerable degree.

Tallow chandlers, many of whom exist in various parts of the city of Edinburgh ; glue manufactories, one of which, to the no small annoyance of the neighbours, is erected in the south back of the Canongate ; breweries, many of which exist about the Abbey Hill and North Back of the Canongate, ought to be removed. But that which above all ought to be removed, is the Shambles in the North Loch. The flesh and fish markets, if sufficiently kept clean, are probably not injurious to the health ; but it is impossible to preserve cleanliness in the shambles, or to dispose of their filth, particularly in the summer months, before it proves injurious to

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those inhabitants who live in that part of the city which is in the immediate neighbourhood of them. Besides, the effect that the constant exposure of killing of these animals must have in the minds of young persons, in rendering them vicious and cruel, is a consideration of very great importance.

SECT. III.—*Police for Modes of Living in Edinburgh.*

It were to be wished, that the Legislature would inflict a still heavier tax for the manufacture of whisky, which would certainly, particularly in this quarter of the world, be the means of annually saving the lives of many thousands. The cheapness of this poisonous liquid, holds out an inducement, to its extensive use, at least to the thoughtless part of the community, while the want of care, which from various circumstances is observed in manufacturing it, renders it very destructive to the constitution.

This, perhaps, is almost the only mode of living in this part of the world, that calls aloud for the interference of our laws to prevent the perpetual devastation which it occasions.

SECT. IV.—*Police for Manners of Edinburgh.*

Till the late police-act was passed, there was perhaps no city in the world where the inhabitants were less disposed to riot and disturbance, particularly in the night; but since that period, they are actually much excited to it. Happily, however, this act is soon to undergo an alteration, when we hope the peace of the city will be again restored.

Under the magistrates, and that respectable body of citizens, the society of high constables, we always enjoyed most uninterrupted tranquillity. I hope, then, the shameful examples of irregularity and disturbance, which we have lately witnessed on various occasions, (should the regulation of that department of police be again entrusted to them,) will stimulate them afresh to the entire removal of such irregularities; and convince us, that unnecessary oppression, by the institution of expensive and arbitrary laws, is, at least in this part of the world, always hurtful, and never beneficial. The individual exertions of the late Mr James Laing, as contributing to preserve the peace of this city, were highly creditable to himself, and will long be remembered with approbation by many of its inhabitants.

During high winds, especially in summer, which so frequently occur in the city of Edinburgh, and from the free passage that they have to sweep along the streets, the inhabitants are, during the dry weather, very much annoyed by the dust; both within doors in destroying their furniture, and in preventing them from passing with any degree of comfort along the streets. Why have we not water-carts similar to those used in London and other places, for the purpose of allaying the dust? Surely the expence attending such an equipage cannot be adduced as an excuse for the want of so great a convenience; and if so, some inconsistency must exist, as there is much public expence thrown away in a variety of ways in Edinburgh, from which no visible benefit can arise, either to the country at large, or to any individual of it.

I know it has been urged, that want of water will not admit of such measures being adopted. This, however, is not true. We have plenty of water in our neighbourhood would we take the trouble to convey it to the city. With very little expence, pipes may be made to convey as much as would answer our purpose from the Water of Leith before it reaches the low ground above St Bernard's Well. Besides, there is much

water at all times destroyed in the city by the carelessness of servants, which, if prevented, would completely answer our purposes in the above way. It will not be believed, that a city, situated like Edinburgh among mountains, can be at a loss for water for any useful purpose.

In addition to this, we ought to have branches from the water pipes into all the various districts of the city, as well as into the neighbourhood of those numerous receptacles of filth ; and either a fine or imprisonment ought to be inflicted upon those inhabitants who do not wash their nastiness into the common sewers, once a-day in winter, and twice in summer.

As a benefit to individuals, and for the purpose of accommodating those who wish for good servants, Mr Nasmyth has proposed that a house shall be chosen, kept by persons appointed for the purpose, as a receptacle for those persons, who either come from the country, or who may be brought up in Edinburgh, wishing to employ themselves as servants of any description : That in this house, while otherwise unemployed, they shall work at those branches of service which they wish to be employed in ; and their merits shall be certified when they leave it ; and that, during

their residence in such a house, they shall be paid for their work, and every variety of employment may be carried on in it for the benefit of the inhabitants, or such strangers as may visit the city. Thus the frequent complaints against servants would be known to be either well grounded or false, and those who hired any servant without a proper recommendation from this place, would take them at their own risk, and would on no account be entitled to redress, even when faults were committed by such vagrant servants.

When I consider the number of accidents that during the winter months occur to skaters, and others, in this as well, indeed, as in every other part of our island, from the falling in of ice, it appears to me very strange that no plan, with which I am acquainted, has ever been adopted to give the drowning person a chance of escape. In the neighbourhood of this city, where skating is a very favourite amusement, there is seldom a season that one or more persons are not drowned in the lakes, or *lochs*, as we call them. Yet this very necessary consideration seems entirely to have escaped the notice of those to whom we ought to look for improvements of this kind.

It is allowed by every one, that most of the persons who fall victims in this way, do so from want of something to catch hold of after they have fallen into the water. They are therefore under the necessity of endeavouring to lay hold of the edge of the broken ice, which almost always gives way, and the unfortunate victim is plunged under it, from which he is seldom able to extricate himself, and therefore must perish. His companions, too, in stretching out their arms, or in holding long branches of trees to assist the escape of the drowning person, often share the same fate.

It occurs to me, that almost all these unfortunate circumstances may be prevented, by adopting a few simple precautions. If poles, iron rings, or such fixed points, were placed at various parts of the lakes, and ropes, or chains long enough to reach any part of these lakes attached to them ; by the assistance of those on the spot at the time, there might always be afforded a very considerable chance of escape for the drowning person.

CHAP. III.

With respect to the cure of those most commonly prevailing diseases of this place, which are generally propagated in consequence of inattention or of neglect, I beg leave to refer the reader to the account given of them in this volume. See pages 271 and 272.

BOOK III.

**OF THE LOCAL CAUSES OF PERMANENT
AND REGULARLY RECURRING DIS-
EASES IN LONDON; AND OF THE PAR-
TICULAR POLICE FOR THEIR REMO-
VAL.**

INTRODUCTORY REMARKS.

THAT the metropolis of the British Empire is the most extensive, and the most populous in the world, sufficiently testifies the importance of which a rational system of medical police must be to its inhabitants; and that these inhabitants are the richest, the most humane, the most generous, is a sufficient pledge that they will surmount whatever difficulties may attend its execution. The narrow lanes and crowded houses of this vast city, the number of manufactories and occupations of every kind producing effluvia which taint its atmosphere, and the low situation and immense extent of the city permitting little ventilation, must afford

the sources of innumerable diseases. To a great and liberal people, then, it is not sufficient to erect hospitals for the reception of the diseased, it must be incomparably more congenial to the feelings, because more rational and more humane, to prevent their existence. And who that reflects for a moment, will doubt the possibility of removing such a source of contamination as is to be met with in some of the streets in St Giles's parish, of the courts and alleys adjoining to Liquorpond Street, Hog-island, Turnmile Street, Saffron-hill, Old Street, Whitecross Street, Grub Street, Golden-lane, Petticoat-lane, Lower East Smithfield, some parts of Upper Westminster, and several streets of Southwark, Rotherhithe, &c. or the imperious necessity of performing this. It is not alone the miserable inhabitants of these places who suffer from their filth. I had almost said it is scarcely they at all who suffer, because they are habituated to their situation, but much rather the inhabitants of the contiguous genteeler parts of the town. Self preservation, then, as well as humanity, demand their instant removal or improvement.

PART I.

OF THE CAUSES OF DISEASE IN LONDON.

CHAP. I.

OF NATURAL CAUSES.

SECT. I.—*Of Soil.*

THE soil in the neighbourhood of London is generally fruitful, abounding with pasture and grain of all kinds produced in the island. The city of London affords such plenty of manure, and the conveniency of carriage is so great, that this country may, in a great measure, be reckoned a garden, and is perhaps the richest and most profitable ground in Britain. The soil of London itself is of the best kind for residence, being sound and dry; and the lower parts are

freed from moisture by subterraneous sewers and drains.

SECT. II—*Climate of London.*

From a mean of the observations made at the house of the Royal Society, from 1772 to 1780, it appears that the annual temperature of London is 52° ; the monthly temperature as follows :

Jan.	35	9	The greatest usual cold is 20° , and happens in January ; the
Feb.	42	3	
Mar.	46	4	greatest usual heat is 81° , and happens generally in July.
April	49	9	
May	56	61	The limits of the annual variation are 2.5 degrees, that is, one degree above, and $1^{\circ}.5$ below the mean.
June	63	22	
July	66	3	
Aug.	63	85	
Sept.	59	63	
Oct.	52	81	
Nov.	44	44	
Dec.	41	64	

During the four last years of the last century, Six's thermometer, out of doors, averaged 49.6; the barometer 29.9; and the average annual depth of rain was nineteen

inches; on the hottest day during the four years, in June 1798, the thermometer stood at 86; and on the coldest day in December 1796, it fell to 4; in that month it averaged 32.1; in December 1797, it averaged 42.7; in December 1798, 35.2; and in 1799, 34.3. There are about 209 days in the year without rain, and 156 in which it rains or snows; about 12 is the average of days in which it snows or sleets; the number of cloudy days when the sun scarcely ever appears, is about 50 or 60 out of the 209.

The summers in London differ much less than the winters, and it is much colder at London in winter than in Edinburgh. The difference between the climate of these cities, as formerly alluded to, considering the difference of latitude to be so very trifling, is astonishingly great. This is more remarkably conspicuous during the summer months, in the production of the various fruits and vegetables which we use for culinary purposes. In London, these articles are more exuberant, and arrive at earlier and greater perfection than in Edinburgh. Indeed, some of them, such as grapes, peaches, cucumbers, &c. cannot be brought to any degree of maturity in and about Edinburgh, without the aid of a hot-bed, and even there

must be very strictly attended to. In London, on the contrary, these measures are not so strictly necessary.

The fogs in London are often astonishingly great; indeed as much, if not more so, than any other part in the island of Great Britain. They certainly far surpass those of Edinburgh, even when every circumstance, such as long continued easterly winds blowing from the Firth, contributes to their formation.

SECT. III.—*Situation of London.*

LONDON, the metropolis of the whole kingdom, lies in 51 degrees, 31 minutes north latitude; the longitude not being reckoned, because it is made the first meridian. It is admirably situated upon a gently rising bank, in a wholesome soil, mixed with gravel and sand, upon the celebrated river *Thames*. The amphitheatre, which the metropolis forms on the north side of the Thames, nobly rising above the banks of that river, is greatly enhanced in beauty by a chain of hillocks on the same side, forming a second amphitheatre, entirely enclos-

ing the first, of which Hampstead, Highgate, and Muswell Hill, are the most prominent features. On the east and west are extensive plains, stretching thirty miles each way along the banks of the river, and forming one of the most fertile vallies on the surface of the earth. While on the south, the landscape is beautifully varied, from west to east, by the high grounds of Richmond, Wimbledon, Epsom, Norwood, and Blackheath, terminating in the horizon by Leith-hill, Box hill, the Riegate Hills, the Wrotham Hills, and Shooter's Hill.

The lands immediately surrounding London, form a warm and interesting prospect. They consist chiefly of grounds cultivated by the gardeners who furnish the public markets with vegetables and fruits, and extensive nurseries of trees of various kinds, occupy a large portion in almost every outlet.

London extends, from west to east, along the banks of the river Thames, being distant from the sea about sixty miles. It consists of three principal divisions, the city of *London*, the city of *Westminster*, and the borough of *Southwark*, with their respective suburbs. The two former divisions are situated on the northern side of the Thames, in the county of Middlesex, great

part of them lying on hills, and forming a grand and beautiful amphitheatre round the water; the latter, on the southern bank, in the county of Surry, on level ground, and anciently an entire morass.

The length of London, from Hyde Park corner to Poplar is about seven miles, exclusive of houses which on each side line the principal roads to the distance of several miles in every direction; the breadth is irregular, being, at the narrowest part, not more than two, and at the broadest, almost four miles.

The walls of the ancient city of London, included a space now in the middle of the metropolis, about one mile and a half in length, and rather more than half a mile in breadth.

The *City*, in its familiar phrase, means the trading part of the town, extending, with slight variations, from Charing-cross to the meridian of the Monument or the Tower; but, locally speaking, it is confined by a circle, the radius of which would reach about half a mile round St Paul's Cathedral.

The west end of the town is the most modern and elegant part of London; it is inhabited by the nobility and gentry, and is the seat of the Government and of the

Court. It may be said to extend westward from the meridian of Charing-cross.

Westminster, which is the seat of the government of the country, adjoins to the city, extending westward.

Eastward of the meridian of Tower-hill, London may be considered as a sea-port; the inhabitants of this large district being in general connected with the shipping interests, and consisting either of owners or captains of vessels, of merchants, ship-builders, sailors, or shopkeepers, and others, who maintain themselves by the business of this unrivalled port.

West of Blackfriars-bridge the banks of the Thames are rendered subservient at once to the objects of pleasure and business, but eastward of that bridge they are solely occupied by a line of warehouses, and devoted to the bustle of commerce.

The broadness of the streets, and the space occupied by the bulk of families residing in London, contribute greatly to health; but there are a variety of circumstances tending to the same point. The greater part of the town is situated on rising ground.—A broad and rapid river flowing through the heart of the town, and agitated twice in four and-twenty hours by the tide, ventilates and purifies the whole; and the immense

quantities of water conveyed into the houses, even the meanest, for domestic purposes, afford the means of cleanliness, one of the surest companions of health. In a word, although the atmosphere of London is too frequently moist, the weather often in extremes, and the change from one extreme to another frequently sudden, yet the metropolis may fairly be deemed one of the most healthy in the world.

The squares exhibit statues, but they are not of the first order. These deficiencies, however, are beautifully contrasted by the plantations of Grosvenor, Portman, Fitzroy, Leicester, Finsbury, Soho, and Lincoln's-Inn squares ; and it is to be hoped that every open space of ground in London will, in the course of a few years, afford its inhabitants this species of summer promenade.

The principal streets are wide and airy, and surpass all others in Europe, in their convenience for trade, and the accommodation of passengers of every description ; they are paved in the middle, for carriages, with large stones in a very compact manner, forming a small convexity to pass the water off by channels ; and on each side is a broad level path, formed of flag stones, raised a little above the centre, for the convenience of foot-passengers.

The whole of the northern side of St James's Park, and the western extremity, are very pleasing to the eye ; it is of an oblong form, and nearly two miles in circuit. The eastern extremity is occupied by the Horse-guards, the Treasury, and other edifices, that do not produce an ill effect. But the south side, in which is the Bird-cage Walk, is deplorable in its appearance.

St James's Palace, and *Park* are situated near the western extremity of the town, on the side next the river, from which, at a small distance, it is separated by Parliament-street, and the site of Whitehall Palace. An inclosure, called the Green Park, is a beautiful spot, gradually ascending from St James's Park, which it immediately joins to Piccadilly, being separated from it by a wall in some parts, and an iron railing in others.

In summer, the eastern side of the Green Park forms a favourite promenade for the inhabitants of the metropolis ; and in fine weather, on every evening, and on Sundays in particular, is always extremely crowded with well-dressed company. At the north-east corner of this park there is a fine piece of water, which is supplied by the water-works of Chelsea, and forms at once a beautiful embellishment and a useful reservoir.

Hyde Park is a royal demesne, immediately contiguous to the metropolis, at the western extremity, nearly in the centre, between its northern and southern points, having the road to Oxford on the north, and the Hounslow road on the south.

This park is a spot of great natural beauty, heightened by a fine piece of water, called the Serpentine River, formed in 1730, by enlarging the bed of a stream, flowing through the park, which, taking its rise at Bayswater, on the Uxbridge-road, falls into the Thames at Ranelagh.

An inclosure of this park, on the north-west corner, is extremely beautiful. This spot is surrounded on three sides, by the park wall, Kensington Gardens, and the Serpentine River; and on the remaining side it is divided from the main body of the park, by a fence, to exclude horsemen and carriages. In summer it is stocked with cows and deer. Its verdure seldom fails, and the beauty of its features appears to be greatly enhanced by the small gardens of the keeper's lodge, with which it is skirted on the side of the park, and the noble grounds of Kensington Gardens on the opposite side. Beneath a row of trees, running parallel with the keeper's garden, are two springs, greatly resorted to.

Kensington Gardens are closely connected with Hyde Park. These gardens join the western extremity of the Park, to which they give a very fine effect ; as the park on that side appears, from the noble foliage of the gardens, to terminate in an extensive wood. The disposition of the grounds, though far from the present refinement in gardening, abounding much with strait walks and lines, yet possesses great beauty and grandeur. These gardens were improved by the celebrated Brown.

One of the most delightful scenes belonging to this great metropolis, and that which perhaps most displays its opulence and splendour, is formed by the company in Hyde Park and Kensington Gardens, in fine weather, chiefly on Sundays in winter and spring.

It has been computed, that 50,000 people have been seen taking the air, at one time, in Hyde Park and the Gardens.

The *River Thames* is the source of all the greatness and wealth of the metropolis ; one of its chief ornaments, and deserving of the especial notice of strangers.

The whole voyage along this river exhibits a continued series of villages, magnificent seats, splendid villas, beautiful pleasure-grounds, and highly-cultivated gardens.

From the magnificent bridges erected across this river at London, the most complete views are afforded of the town ; and the immense number of boats, barges, and smaller vessels, which are always in motion, afford a spectacle of active industry, which can no where be equalled.

The Thames rises two miles S. W. of Cirencester, in Gloucestershire ; at Lechlade, 138 miles above London, it becomes navigable for barges of 80 or 90 tons : it is navigated by ships of 7 or 800 tons up to London-bridge, and by the largest ships to Deptford and Greenwich. The tide flows eight miles in four hours, as high as Richmond, but the water is not salt higher than Gravesend, which is 30 miles below London Bridge. At London, it is about a quarter of a mile broad, and at Gravesend, about a mile. Its whole course is about 200 miles.

The southern banks of the Thames, contiguous to the bridges, for a considerable extent, are lined with manufactories and warehouses ; such as iron-founders, dyers, soap and oil-makers, glass-makers, shot-makers, boat builders, &c.

It deserves to be remarked in conclusion, that notwithstanding the very existence of London depends on the navigation of the Thames, insomuch, that if this river were

rendered unnavigable, London would soon become a heap of ruins; like Nineveh and Babylon, yet some of the passages of this important river below the Nore are suffered to become half-choked, and almost impassable, from the increase and shifting of sand-banks:

The tide in the river flows 15 miles higher than London; but the water is not salt in any part of the town, and it is naturally very sweet and pure. The river is secured in its channels by embankments, and, when not swelled by tides or rains, is not more than a quarter of a mile broad; nor in general more than 12 feet in depth; at spring-tides it rises 12 and sometimes 14 feet above this level, and of course its breadth is increased.

The *New River*, in several points of view, is one of the most wonderful concerns in this metropolis! Notwithstanding there are 160,000 houses in London, yet, by means of the New River and London-bridge water-works, every house, and almost every room, is most abundantly supplied with water, which is conveyed into them by means of leaden pipes, with unfailing precision and regularity; for an expence to each house of only a few shillings per annum.

The New River is a canal of nearly 30 miles in length, cut for the sole purpose of conveying a regular supply of water to the

metropolis, by Sir Hugh Middleton, and first opened in 1603. Its termination, called the New River Head, adjoins to Saddler's Wells, and from hence the water is conveyed in every direction, by means of 58 main pipes of the bore of seven inches ; these convey the water under ground, along the middle of the principal streets ; and from them leaden pipes, of half an inch bore, branch to every house. From the property of water always to find again the level which any part of its body has attained, and as the New River Head is situated upon high ground, the water rises in most houses into the second floor, and in many into the third and fourth stories. By means of one water and two steam engines it is, however, forced to a still higher level, and thus made to supply parts of the town which are situated as high or higher than the surface of the bason.

Notwithstanding the interior of the kingdom is almost wholly intersected by canals, the *Grand Junction Canal* is the only one which, for commercial purposes, has yet been extended to the metropolis. The reason may be found in the policy of government, which, to encourage the nursery of seamen in the Newcastle trade, prohibits the introduction of coals into the metropolis by any other means, notwithstanding better

coals could be delivered at a lower price by means of this canal. As, however, the tonnage upon coals is the staple article of profit to the undertakers of a canal, it is obvious the inducement is less strong to form new lines of inland navigation near the metropolis, than in other parts of the kingdom.

This canal terminates in a bason at Paddington, after running 100 miles, from the village of Braunston, in Northamptonshire, where it enters the Oxford Canal, and by which it is connected with the Coventry and Birmingham Canals, the Grand Trunk Canal, &c. thus forming a regular line of water conveyance from London into Lancashire and Yorkshire.

The village of *Hampstead*, from its beautiful situation, and the fine views which it commands of the metropolis, and of the neighbouring country, is one of the most agreeable within the same easy distance of four miles. The variety of its local situations recommends it to the inhabitants of London, as a place of retreat during the summer months, and of retirement at the close of life; and it consequently abounds in delightful villas and elegant mansions.

Highgate is a kind of sister hill to Hampstead, and about the same distance from London. It does not, however, possess the

same variety of prospects as Hampstead, nor is it so large a village.

The small village of *Kew* is rendered remarkable by its royal palace, and famous gardens. It is situated opposite Brentford, on the south bank of the Thames, six miles from Hyde Park Corner, and about four miles beyond Kensington. *Richmond*, celebrated for its hill, and for its picturesque situation on the banks of the Thames, lies about eight miles from Hyde Park Corner. *Twickenham*, distinguished by the immense number of beautiful seats and villas which adorn it, is ten miles from Hyde Park Corner, and about three miles from Richmond. *Vauxhall Gardens*, a delightful and much frequented place of summer amusement, which has so long been the resort of the gay world, is situated about a mile and a half from London, on the south side of Lambeth.

CHAP. II.

OF ARTIFICIAL CAUSES.

SECT. I.—*Of Construction of Houses in London.*

MOST of the houses in London are built on a uniform plan. They consist of three or four stories above ground, with one under the level of the streets, containing the kitchens. In each storey is a large room in front, and in the back is a smaller room, and the space occupied by the staircase. This, however, is only meant as to the general class of houses. Those of the nobility and persons of high fashion, though mostly plain and simple in the exterior, are internally constructed with all the variety of taste, elegance and convenience, for which modern architecture is distinguished. Water, as already observed, is conveyed, into almost every house, by leaden pipes, and preserved in such quantities, that the inhabitants have a constant and even lavish sup-

ply. Nothing can be more commodious or cleanly than the interior of the houses ; and this character extends generally to lodging-houses, hotels, taverns, coffee-houses, and other places.

The population of London has diminished almost one half during the last century. Many streets have also been widened, and many public buildings erected, whereby the number of houses has been much lessened : and the houses which remain are not crowded with inhabitants, as they formerly were.

There are in London, at least, one million two hundred and fifty thousand inhabitants.

This city does not excel in the number of buildings celebrated for grandeur or beauty ; but, in all the principal streets, the metropolis is distinguished by an appearance of neatness and comfort. Most of the great streets, appropriated to shops for retail trade, have an unrivalled aspect of wealth and splendour. The shops themselves are handsomely fitted up, and decorated with taste ; but the manufactures with which they are stored form their chief ornament. It has been estimated that London contains about 8000 streets, lanes, alleys and courts ; 60 squares, and 160,000 houses, warehouses and other buildings.

To enumerate the striking instances of badly constructed houses in this immense city, would be as impossible as it is unnecessary. They are sufficiently known to every one; and whoever, on arriving from the country, casts a single glance upon the countenances of the majority of its inhabitants, will be amply satisfied of their bad effects. I have already alluded to some of the most remarkable instances of this kind.

I shall now then proceed to apply these observations to some of the most remarkable of the individual constructions in London, viz. prisons, hospitals, &c. Here I need not again protest against the introduction of such places into the centre of populous cities; the wretched effects of this practice must be sufficiently obvious to every observer.

Newgate presents a fine uniform exterior to the west, consisting of two wings, the debtors' and felons' side, with the keeper's house in the middle.

The north side, appropriated to debtors, men and women, consists of two court yards, which are far too circumscribed for the numerous inhabitants. The men's court is only 49 feet 6 inches by 31 feet 6: The women's of the same length, and about half the width. The whole square is entirely surrounded by the wards, which rise three

stories above the pavement, and the women's yard is separated from the men's by a wall.

The sides of the quadrangle are called the master's side, the cabin side, from the cabin bedsteads in them, the common side, and the women's side. The apartments are 14 in number, all of which, except one, which occupies in length the whole side of the prison, are nearly of the same dimensions, 23 feet by 15. The number of inhabitants in these rooms is from 12 to 20 in each. The largest room is sometimes inhabited by as many as 30. The debtor's side almost always contains 200, and sometimes as many as 300. The women have two wards of the same length, but not so wide. During the Shrievalty of Messrs Smith and Phillips, these yards, and all the wards, were repeatedly lime-washed, and by these, and other means, Newgate was changed from a loathsome prison, dangerous to the health of the metropolis, to a state which may be quoted as a model for all similar places. Water is now plentiful, ventilators are introduced into every window, and a general system of cleanliness has been substituted for one of the most disgusting filth.

Here I cannot do better than quote, in his own words, the observations of one of

the gentlemen above alluded to on this important subject.

"I had often viewed," says Sir Richard Phillips, "these places, particularly the crowded prisons of the metropolis, as mansions of misery, in which were often united in the same person the whole dismal catalogue of human woes. In the ward of Newgate called the long ward, 35 feet in length, and 13 feet in breadth, there are usually 30 prisoners, which affords a breadth of only 26 inches to each prisoner, allowing space for door-ways and fire-places. The horrors of such a situation, during the night, when the prisoners are all locked up in their respective wards, especially during the heat of summer, may be better conceived than described."—"They (the women also) were obliged, during the night, to pack themselves in the same manner as the slaves are packed on board a slave ship, without bedding, and with no other covering than a single rug, exposed to the draught of four or five open windows."—"While, as is commonly the case, there is only a space of 18 inches in the women's ward of Newgate for each prisoner to sleep in; and the court which they are allowed to walk in during the day cannot afford sufficient exercise from want of room, or sufficient air from its confinement,

it is scarcely to be expected that diseases of the worst kind can be absent. I understand that when the number of prisoners (in Newgate) exceeds six hundred, fevers have generally begun to shew themselves; and in 1780, when the number amounted to nearly eight hundred, a contagious fever broke out, and carried off five or six of the prisoners per day."

It is to be regretted that similar abuses are not remedied even to this extent in all the other numerous prisons in the metropolis.

It is agreeable to be able to turn from these to houses destined for the reception of the diseased, and for the alleviation of their sufferings. Even some of them, however, are not without faults in construction.

Among the moral features of the metropolis, is the multitude of its institutions for the relief of the indigent and the diseased in their various wants. Beside two hospitals, supported at the public charge, one for the maintenance of invalid seamen, and the other for invalid soldiers, London has 22 hospitals or asylums for the sick and lame, and for pregnant women; 107 almshouses, for the maintenance of old men and women; 18 institutions for the maintenance of indi-

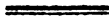
gent persons of various other descriptions ; 17 dispensaries for gratuitously supplying the poor with medicine, and medical aid, at their own dwellings ; 41 free schools, with perpetual endowments, for educating and maintaining 3500 children of both sexes ; 17 other public schools, for deserted and poor children ; 165 parish schools, supported by their respective parishes, with the aid of occasional voluntary contributions, which on an average clothe and educate 6000 boys and girls ; and in each parish a workhouse, for maintaining its own helpless poor. But this ample list of public charities does not include the whole account. In the city of London, belonging to its corporation, there are 94 public companies, who distribute above 75,000l. annually in charity ; and the metropolis has beside a multitude of institutions, either for the education or relief of those who are actually distressed, of a less public and prominent nature than the above, but which immensely swell the aid given to the indigent. It is difficult even to discover each of these institutions, many of them being in obscure parts of the town, and so little ostentatious, as to assume no public mark of their existence ; but the sums annually expended in the metropolis, in charitable purposes, independently of the private

relief given to individuals, has been estimated at 850,000l.

Most of the hospitals and asylums were founded by private munificence ; of these, some are endowed with perpetual revenues, and others supported by annual or occasional and voluntary contributions. The almshouses were built and endowed either by private persons, or corporate bodies of tradesmen. Many of the free-schools sprang from the same origin. The magnitude of several of the buildings dedicated to public charities, and the large revenues attached to them, no doubt well deserve the stranger's notice ; but that which graces the capital and the nation with more unequivocal honour, is the general administration of the public charities. The wards of a London hospital do not form any painful contrast with exterior magnificence, by inward filth and a niggardly measure of the aid afforded to the unfortunate inhabitants. The medical assistance is the best the profession can supply ; the attendance is ample, and the persons employed in that office as humane as its nature admits ; the rooms cleanly, and as wholesome as care can render the dwelling of a multitude of diseased persons ; and the food is proper for the condition of the patient. In the almshouses and other buildings, for the maintenance of

indigent old age, and other decayed people, there is not only an air, but a real possession of competence and ease that cannot be too highly spoken of. From the free-schools, youth as learned, have been sent to the universities of the kingdom, as from any of the most expensive seminaries for private tuition ; whilst all the public scholars receive an education completely adapted to the stations for which they are designed.

These buildings, however, are not without their faults, as just stated. It is above all, deeply to be regretted that most of them are in the centre of the city.



SECT. II.—*Of Occupations in London.*

LONDON is not only the greatest commercial city in the universe ; but perhaps one of the first manufacturing towns. It is the largest, wealthiest, and most populous city in the world. Its trade is astonishingly great ; and it has been calculated, that the transit of merchandise to and from London and its neighbourhood amounts yearly to at least 220,000,000*l.* Sterling. It abounds with markets, warehouses and shops, for all ar-

ticles of necessity or luxury ; and, certainly there is no town in which an inhabitant, who possesses the universal medium of exchange, can be so freely supplied as here with the produce of nature or art, from every quarter of the globe.

The manufactures of London consist chiefly of fine goods and articles of elegant use, brought to more than the ordinary degree of perfection, such as cutlery, jewellery, articles of gold and silver, japan ware, cut-glass, cabinet work and gentlemen's carriages ; or of particular articles that require a metropolis, a port, or a great mart, for their consumption, export, or sale ; such as porter, English wines, vinegar, refined sugar, soap, &c. Nothing surpasses the beauty of many of the former articles ; nor any thing the extent and value of the manufactories of the latter kind. A most extensive silk manufactory is carried on by the inhabitants of Spital Fields, Shoreditch and Bethnal-green parishes ; the persons employed in it amounting to about 7000. In Clerkenwell, about the same number of persons are occupied in the different branches of the watch-manufactory. The coach-builders and harness-makers are rather numerous, and have brought their respective works to such a high degree of perfection as far as to

exceed, in point of elegance, those made at any other place in the world.

Of these numerous employments, it will at first appear, that there must be many bad as well as good consequences ; many effects prejudicial to the health of the inhabitants. Not to mention the numerous accidents at such an extensive port, these manufactories, and the sedentary or irregular habits with which they are connected, will lead to the production of consumption, fevers, &c.

SECT. III.—*Modes of Living in London.*

THERE are perhaps but very few cities where every class of the people enjoy so large a proportion of the necessaries of life as they do in London ; and the immense quantity of animal food made use of, is a strong proof of this. It has lately been computed, that the number of bullocks annually made use of is about 110,000, calves 250,000, sheep 770,000, lambs 250,000, hogs and pigs 200,000, besides a variety of other animals. The following average number of

oxen and sheep sold even at Smithfield, may convey some idea of the immense consumption of animal food used in the metropolis. From 1750 to 1758, 75,331 oxen and 623,091 sheep; from 1759 to 1767, 83,432 oxen and 615,328 sheep; from 1768 to 1776, 89,262 oxen and 627,805 sheep; from 1777 to 1785, 99,285 oxen and 687,588 sheep; and from 1786 to 1794, 108,075 oxen and 707,456 sheep. Gradually too, as the number disposed of encreased, their value, and consequently their size, became greater. We find, that the average weight of oxen in 1700 killed for the London market, is 370 lbs., of calves 50lbs., of sheep 28lbs.; now, the oxen weigh 800 lbs., the calves 140 lbs., the sheep 80 lbs., and lambs are generally about 50 lbs.

Fish being very high-priced, there are comparatively a small number consumed in London; certainly, however, this does not happen from scarcity, as they may be easily procured on various parts upon our coasts, and conveyed to the markets at very little expence. It has been computed, that not more than 14,500 boats of cod and other sea-fish are annually brought to London. Besides this, however, mackerel are sometimes both plenty and tolerable cheap.

Poultry is in price most exorbitant; and consequently seldom used but at the tables of the wealthy. Game is more commonly met with, in consequence of the intercourse which exists between London and those parts of the country where it is easily procured. Venison is used in considerable quantity, and in general of good quality, as it is principally bred by those people at whose tables it is most commonly found.

The quantity of milk used in London is immense. The annual number of gallons has been computed at 6,980,000; and for the purpose of furnishing it, 8,500 cows are kept. The milk furnished for use, is almost always greatly adulterated with water, and, especially when the quantity of water put into it is likely to make it too thin, it is even asserted, that a considerable proportion of chalk is added to it.

There are 10,000 acres of ground near London, cultivated for the purpose of supplying its inhabitants with vegetables, and 3,000 acres solely for fruit. The annual sum paid for vegetables and fruit for the London market, has been computed at about 8,000,000.

There are about 900,000 quarters of

wheat annually used, each containing eight Winchester bushels; 800,000 chaldrons of coals, each chaldron containing 36 bushels; 1,775,000 barrels of porter, each barrel containing 36 gallons; 11,146,782 gallons of spirituous liquors and compounds; 65,000 pipes of wine; 21,265,000 pounds of butter; and 25,500,000 pounds of cheese.

The quantity of Porter brewed in London annually exceeds 1,200,000 barrels, of 36 gallons each; the most considerable breweries are those of *Whitbread, Brown, and Co., Meux and Co., Barclay and Co., Hanbury and Co., and Brown and Parry*, each of whom brew annually upwards of 100,000 barrels. Next in order to these, stand *Felix Calvert and Co., Combe and Co., Goodwyn and Co., Elliott and Co., John Calvert, and Co., Clowes and Co., &c.*

It has been falsely asserted, that the Thames water alone could make good porter; but Whitbread's, which is the largest brewery in London, is partly supplied from the New River, and partly from a spring in the premises.

One of Mr Watt's steam-engines works the machinery in Whitbread's brewery. It pumps the water, wort, and beer, grinds the malt, stirs the mash-tubs, and raises the casks

out of the cellars. It is able to do the work of 70 horses, though it is of a small size, being only a 24-inch cylinder, and does not make more noise than a spinning-wheel.

I may remark, that when Dr Black discovered the principle of latent heat, he certainly did not imagine, that by its astonishing power, machines might be constructed by which the greatest manufactories in the world, such as the above, would be carried on; and hence the immense importance of attending to any fact in science, however little reference it may, in the first instance, seem to have to the arts.



SECT. IV.—*Manners of London.*

To describe the manners of a city so extensive, composed of classes so opposite to each other, and of inhabitants so numerous, assembled from almost every city and province in the world, would be a task of the utmost difficulty to execute.

In respect, however, to the labouring and trading classes of the inhabitants, they are

generally industrious and frugal. Except in the case of long sickness visiting the father of a family, (to which the wages of the labourer were never adequate) and the confusion and distress which are peculiar to very hard times, the dress, appearance, and manners, of the labouring people, are sufficient proofs that they are, in general, neither idle nor dissolute. The same may be generally said of the poorer sort of shopkeepers, who, from the rate of their earnings, may be placed in the rank of the labouring people. Male and female servants, in plain and honest families, may be also placed in the above rank, and with a similar character.

The generality of shopkeepers in the city, however, enjoy an affluence of circumstances independent of particular patronage or favour, from the fullness of customers in the *market* (as all that part of the metropolis may be justly called) that gives them an independence of manners as curious as it is fortunate. A city shop-keeper acts out of his shop, as if he had not a master in the world.

Merchants, bankers, and all the higher orders of traders, are distinguished in manners from the last mentioned classes; for, although they have independence in their manners, it is not that blunt independence

which marks the shopkeepers of the city, they being more in the habit of associating with people of fashion. In short, in respect to almost every description of traders in this city, it may generally be asserted, that their independence, and the ancient habits of their country, render their moral character equal, if not superior, to almost any other nation. It has been asserted, that the bustle of commerce, and the love of gain, have tended to degrade and vitiate their minds. In some instances this is probably too true; but in general, with the power, they have acquired the resolution, to be just. Many, nay a very great proportion of them, would sooner suffer death than commit a fraud; being well aware, that such an act would at once be dishonest and destructive to themselves. Hence honesty has become not only a moral virtue, but a political habit, diffusing itself very extensively.

The superior orders of society in this city are for the most part distinguished by the very highest polish in their manners. In them we can at once observe a degree of dignity and moderation, which preserves them from the flimsy style of some small portion of the nobility or gentry, who degrade themselves by perpetually mixing in

the maze of insipid folly and pernicious luxury. Where such adulterated manners, however, are not indulged in, an English gentleman always conducts himself towards his inferiors with propriety and respect.

The time of the higher classes is divided between the town and country. In the first of these, they are active, and quite free from that indolence which characterises many other nations; and in the country, they are almost constantly in the habit of exercising themselves in the amusements peculiar to the place.

There are, however, some points in the manners of this metropolis which, it has justly been observed, are disrespected by all parties.

I principally allude to want of chastity in women of rank, and to profligacy of men in a similar station. Such tainted characters are countenanced by the vilest parasites alone, and only by them when their fortunes enable them to gratify their luxury by elegant entertainments.

Still, however, the manners of the generality of the people are open and generous, and there is an ease in their conduct which, in the less polished parts of our island, is scarcely known.

The mode of living in London, particular-

ly among men of business, and not unfrequently among the fashionable, is highly injurious to health, by sooner or later destroying the powers of the whole digestive organs. They usually breakfast early, and after fatiguing themselves till they become faint and languid, they take a hearty and sumptuous dinner, drink tea, and sup at one sitting. These practices, while persevered in, hold remedies at defiance.

The improvident, and even the luxurious mode of living which too generally also prevails among the lower ranks, is ultimately the cause of much misery among them.

There are, in the city of London, considerably beyond 5000 public-houses; and it has been calculated, that the money expended in beer and spirits in these receptacles of idleness and profligacy, by the lower orders of society only, is upwards of three millions Sterling yearly!

In this metropolis, it has been justly observed, that disorders of the bowels and stomach, accompanied with violent pain, bilious vomiting, &c. are often aggravated by the sudden alterations of heat and cold; but they are principally to be referred to the intemperate use of gin and other spirituous liquors; a cause of disease more pernicious

to the labouring class of people in this city, than the combined influences of its air, climate, occupations, unseasonable amusements, contagious and other prejudicial effluvia. Dr Willan, from observation, thinks himself warranted to state, that considerably more than one-eighth of all the diseases in London, which take place in persons above 20 years old, happen prematurely through excess in drinking spirits.

The streets of London are well paved and lighted; there are few street robberies, and scarcely ever a midnight assassination. Yet it is singular that the watchmen are generally old and decrepid. If, however, a person be attacked or assaulted by thieves or others in the streets by night, the cry of *Watch*, three or four times repeated, will instantly bring up to his assistance several of the watchmen, and the assailant is seldom able to effect his escape.

Underneath the pavements are large sewers, which communicate with each house by smaller ones, and with every street by convenient openings and gratings, to carry off all filth that can be conveyed in that manner into the river.

Besides the public baths, which certainly are of the utmost service, there are others

attached to many of the great hotels and coffee-houses ; the former are,

At Peerless Pool, City-road	In Well's-street, Cripple-
In Cold Bath-fields	gate
Long Acre	In St Mary Axe
In Old Gravel-lane	Harley street, Cavendish-
Bagnio-court, Newgate-	square
street	Strand, lane
Astley's floating bath at	Charing Cross
Westminster Bridge	Brook street, Fitzroy
In Chapel-court, Vere-	Square
street	Bath place, New Road,
In Berkley-square	Fitzroy Square
In Park-street	And a sea-water bath,
In St James's-street	George Street, Adelphi,
	in the Strand.

Other sea-water baths, to be supplied by pipes from Brighthelmstone, are intended to be erected on a most extensive scale at Lambeth.

The terms of bathing are from 1s. to 2s. for a single time in fresh water ; from 3s. to 4s. in sea water ; and in warm sea water, at 7s. 6d. ; a warm bath at 4s. per time, and a vapour bath 5s. ; but are lower, if persons subscribe by the year or quarter.

Unless attention be paid to various circumstances connected with the manners of the poor in London, it is totally impossible to arrest the ravages of contagion. The sending the infected to hospitals is only attended by temporary relief, and has no ef-

fect in removing the causes of their diseases.

CHAP. III,

THE plague, which had broken out many times in Queen Elizabeth's reign, appeared in 1603, and made such dreadful devastation, that between March and December, it swept away no less than 30,561 persons; and though its greatest violence ceased the following year, it did not entirely leave the metropolis till 1611.

About the beginning of May 1665, one of the most terrible plagues that ever afflicted this or perhaps any other kingdom, broke out in London. The week in which the plague was first discovered, it carried off nine persons, and spread an universal dread through every rank in the metropolis, but the week after the sufferers being reduced to three, the fears of the citizens abated. In succeeding weeks, however, the number progressively increased, and in time it was not less than 470 a week. The nobility, gentry, and principal citizens, now fled with

precipitation, and in July the number increasing to 2110, the generality of the houses were shut up, and the streets deserted. In September the number of the dead amounted in one week to 6988 ; in the next week it decreased by nearly 400, but again rose to 7165.

The diseases which now occasion the greatest mortality in this metropolis, seem to be consumption, (see Vol. I. p. 283.) and fever (see p. 254.) The first of these prevails in general throughout the year, the latter always in greatest severity during the spring, or when the days begin to lengthen, but more particularly during the summer months; on this account it has been termed the summer fever. Toward harvest, it becomes more of a contagious and malignant nature, and is usually checked when the frosts become severe. In the harvest, too, cholera and diarrhæa (see p. 273.) occur in practice. Convulsions, also, as it is generally and vaguely termed, is a disease of great mortality, particularly among infants and children. As this disease, so far as my observation goes, is often an effect of other complaints, very often of water in the brain, (see p. 238), I have no hesitation in placing it under this head, and of particularly recommending the strictest attention to the

symptoms which occur previous to such a termination. Inflammatory complaints (see p. 22,) are neither so frequent nor so severe in London as in the more northern parts of our island; the most violent cases, however, are always to be met with in February and March. Catarrh, sometimes attended with sneezing, and profuse expectoration, (see p. 227,) is to be met with throughout the year, but is most severe in the spring months. From the modes of living, too, of a great part of the inhabitants, liver and stomach complaints (see p. 265 and 269,) are very common, entailing on many hundreds a life of the very greatest misery, which, from the tedious nature of these complaints, often continues for several years.

In the year 1650, the total number of deaths was 8,764. In 1700, they were 19,443. In 1750, they were 23,727. In 1798 and 1799, they were 18,000 in each year. And in 1800 they were 23,068, in 1801 they were 19,374, in 1806 they were 17,938, viz. 9215 males, and 8723 females. In that year, the following is a list of the principal diseases :

5405 died under two years of age.
 1374 between seventy and one hundred.
 1 upwards of one hundred.

- 382 of asthma.
- 348 of apoplexy.
- 3996 of consumption.
- 3602 of convulsions.
- 763 of dropsy.
- 1354 of fever.
- 101 of gout.
- 560 of inflammation.
- 146 in a state of lunacy.
- 530 of measles.
- 285 of mortification.
- 1158 of small pox.
- 481 from teething.

PART II.

POLICE FOR CAUSES OF DISEASE IN LONDON;

CHAP. I.

POLICE FOR NATURAL CAUSES;

SECT. I.—*Police for Soil.*

THE soil in the neighbourhood of London is certainly in a great measure prevented from producing diseases by the great cultivation which every where is to be found near it. Were it not for this, the ground being for the most part but slightly elevated, or indeed rather low-lying, the moisture which would in all probability collect in various parts, would render the atmosphere less salubrious.

Within the city, &c. much is effected in the prevention of disease by the soil being kept moderately dry and healthy, by drains and common sewers in almost every part of it.

From many of the low grounds about London, where draining them, from their situation, would be attended with much difficulty, I hope, after what I have already stated on various occasions, I need only recommend the rearing of those plants and trees which are most likely to absorb the noxious effluvia necessarily generated in such places.



SECT. II.—*Police for Climate.*

IN London, certainly the frequent intersection of streets would be of considerable benefit, by promoting ventilation, and consequently in removing the stagnant air constantly generated in the narrow streets, close pent-up alleys, &c. ; but as it is not circulation alone that can purify such air, the chances of benefiting from the intersection of streets, &c. in London, or in any overgrown city of a similar nature, must,

though certainly advantageous, be less so than in Edinburgh, where these sources of ventilation do not, as in London, waft the noxious vapours from one door into the next, but entirely remove them without the city.

For the purpose of promoting ventilation, too, the local situation of London is inferior to that of Edinburgh; still, however, we ought to adopt every measure for the purpose of reaping every benefit from it which its situation, &c. will admit of. It thus becomes a matter of greater necessity in London than in Edinburgh to plant shrubberies wherever it is admissible; and especially in all the lower lying places, where dampness prevails, the willow tree ought to be planted.

SECT. III.—*Police for Situation.*

FROM the well constructed drains and sewers, and from the contiguity of the Thames to London, even the disadvantages arising from its being built almost on a plain, are greatly obviated. The police for this department, as relating to the health of

the inhabitants, does great honour to the magistrates of the city; and were nearly the same efforts made in Edinburgh for the prevention of stagnant and putrid masses of filth, its inhabitants would soon be prevented from regretting that improvements necessary to the preservation of health are always carried on with a tardiness which is quite unpardonable.

After the plans I have in former parts of this work suggested for the improvement of this department of police, it may be unnecessary for me to repeat them here, as those plans, with the reasonings respecting them, may be applied to London and its neighbourhood, wherever they may be found necessary.

CHAP. II.

POLICE FOR ARTIFICIAL CAUSES.

SECT. I.—*Police for Construction of Houses in London.*

FROM a general view of the construction of houses in London, it will appear, that they are less calculated to the production of disease than those of many parts in Edinburgh. In the former, as one house is usually occupied, by one family, they are less crowded, and consequently less apt to have the air within them vitiated; while in the latter, we too often find various families huddled together under the same roof, which, in many places, must be highly destructive of health. Still, however, the houses in many parts of London lose much of the advantage which they derive from the above circumstance, by being built in narrow and ill-aired lanes, where a pure atmosphere can never be found; and where

the vitiated habits of the miserable possessors increase the evil, by suffering even unnecessary accumulations of filth of every description to exist on every side of them. Attention, therefore, to the removal of some of these causes of disease, ought to be considered as an object of the very greatest importance.

Another object demanding our most serious consideration, is the construction of the prisons in this metropolis; and when we reflect, that not only their situation, but every circumstance existing within them, is calculated both to cause and to propagate diseases of the most destructive kind, it becomes a neglect of duty of the most unpardonable nature not to exert ourselves for their amendment.

Instead of these houses being placed in the very midst of this metropolis, why are they not, in preference, built on the highest grounds in the immediate neighbourhood of the city, or on the River Thames in the form of hulks. Were any of these plans adopted, the prisoners would only be deprived of their liberty, while at present, they are in a great measure deprived both of liberty and of health. Whatever objection may be urged against either of these proposals, they certainly would possess one de-

cided advantage over the present state of the prisons in London, that their situation would admit of constant supplies of pure air.

These circumstances respecting the situation, &c. of prisons in cities, seem to me so plain and so practicable, that it amazes me the Legislative body of our island has never acted on them with regard to their formation, &c.

SECT. II.—*Police for Occupations in London.*

AFTER what I have stated under the general head entitled as above, and the few remarks afterwards made on the same subject, under the same head, when applied to the City of Edinburgh, it may lead to unnecessary repetitions to dwell at length upon it now. I shall therefore refer the reader to those parts of this work, and leave him to apply them to those occupations of London, which, less or more, endanger the health of the persons employed in the prosecution of them.

**SECT. III.—*Police for Modes of Living
in London.***

THE benefit which would certainly be experienced, at least by the lower orders of society in London, by prohibiting the manufacture of British gin and other poisonous compounds, must be incalculably great. They are, I believe, principally formed of whiskey sent from Scotland and other places for the express purpose ; and when its quality is so completely covered by the numerous articles which are mixed with it, it is impossible to know whether the original spirit has been good, except by its effects, which we find in those who are in the habit of using such liquors, to be very destructive. It has been observed, that when these baneful articles have been raised in price, so that it has been beyond the power of the common people to purchase them, at least in great profusion, the comparative industry of those people has always been observed to be greatly augmented. The necessity, therefore, for legal interference to prevent such poisonous draughts from being so universally used, appears evident.

From the keen disposition for mercantile pursuits which the trading part of the community are allowed by every one to possess,

the irregularity in their modes of living, owing to the very great length of time between some of their meals and the very short time between others, is slowly but surely destructive of their health. Their digestive organs are at length, by these means, thrown into a state of derangement, their victuals cease to nourish them, and, at a larger or shorter period, from this cause alone, diseases of a more formidable nature affect them, which are almost always attributed to other causes, and thus many thousands are annually destroyed.

With respect to many in the higher ranks of society, I may remark, that one acting in the capacity I now do, cannot do more than merely point out, in a very general way, those irregularities in modes of living which are injurious to health.

Their sumptuous meals at irregular hours, often but a short time before retiring to rest, however luxurious they may be, must be highly injurious to health. The clearest proof of it, is the very great derangement in the digestive organs of such persons, often much greater than is to be met with in almost any other classes of society.

Upon the whole, however, I believe the people of Scotland are more in the habit of

using great quantities of inebriating liquors than the English.

SECT. IV.—*Police for Manners of London.*

CLEANLINESS, in every respect, I believe, is as much, if not a more prominent feature in the character of the inhabitants in London, than in perhaps most other parts of our island. Still, however, especially among the very lowest orders of society, nastiness, perhaps of every description, is carried to the greatest extent. Among them, therefore, were it but out of respect to those in their immediate neighbourhood who may be exposed to the influence of such nuisances, they ought to be prohibited. Among such people, reasoning has no effect, unless it be to irritate them and render them worse. It might therefore be proper, in order that the duties of a police may be rendered less arduous, to encourage them by small rewards to lodge information of the existence of such nuisances, that these may be removed, and the offenders punished. In this way, we might be able to remove many sources

of nastiness which, unless some such measure be adopted, must continue to exist.

Another species of cleanliness is cold or tepid bathing, which cannot be so conveniently procured in London as in Edinburgh and many other places. Cold and tepid baths, therefore, ought to be established all over London at a moderate expence. This would not only add greatly to the comforts of the poorer and middling classes of society, but contribute greatly to the prevention of diseases among them. Indeed many of the higher ranks of society are blameably negligent of this mode of cleanliness.

CHAP. III.

WITH respect to the cure of those diseases, arising from the foregoing causes, which I have mentioned as being most common in London, I need only refer the reader to the account given of that part of our subject in this volume, under its respective heads. I may, however, remark, that inflammatory complaints do not in general admit of repeated blood-letting so freely as the same states of disease is, by daily experi-

ence, found to do in Edinburgh and its neighbourhood; nor is this practice found so often necessary in the former as in the latter place. Blisters, &c. answer better, and are generally more successful. These differences seem partly to exist in consequence of the state of the atmosphere from the difference of latitude of these places, and partly from the great vitiation which it must suffer in consequence of various operations carrying on in that immense metropolis.

RECAPITULATION & CONCLUSION,

EXHIBITING

THE PARTICULAR PLAN OF POLICE TO BE ADOPTED; AND THE REGULATIONS CONNECTED WITH IT.

PHILANTHROPIC exertions must, at all times, be highly respected, from the purity of the motives to which they owe their origin. But that which may, in some measure, prevent their necessity, ought certainly to claim some attention.

Although, in many of the publications detailing plans for the suppression of contagion, there are to be found observations of the highest importance; yet none of them seem to attach even as much importance to the prevention or to the removal of those sources which produce disease, as to the cure of the diseases themselves, and to the maintenance of those persons who may be labouring under them. This, however, appears to

me to be a secondary consideration ; because, *while the sources occasioning these diseases exist, the cure of the diseases themselves is only productive of temporary relief.*

The erection of houses for recovery from fever, for instance, without employing the proper means for its prevention, is like throwing to foot of the *list* the officers who concluded the convention of Cintra, without having afforded them the means of avoiding it.

Our main object, then, is the prevention of disease ; and the cure ought only to be attended to, when the prevention *cannot* be effected. The detection and removal of the causes of disease is in reality the true essence of medical police. Erection of hospitals for the cure of diseases becomes only a secondary consideration, as the necessity of such measures entirely exists in proportion to the neglect of the former circumstances.

Houses of recovery are doubtless of the very greatest importance in the cure of contagious disease ; in them at least, two thirds more are cured than when the disease is unchecked by such means, and allowed to run its course in the dwellings of the poor. When these fever houses are therefore of such importance, certainly the same philanthropic principle being carried

to the removal of the causes of such diseases would be incalculably more beneficial, and would in a great measure even prevent the necessity of such establishments.

There can, indeed, be no question, that were more attention paid to arrest the progress of disease among the poor, the necessity of hospitals would be less imperious; in short, the sums annually laid out for erecting and supporting such institutions, being appropriated to the removal of the sources of such diseases, would ultimately prove a permanent, while the other only can, as already stated, serve a temporary purpose.

There can, then, be no doubt, that were the Legislature to give that attention to the removal of the causes of disease which they ought to do, the necessity of hospitals, fever-houses, &c. would be easily dispensed with. Under these circumstances, the largest city in Europe, would, I believe, be fully supplied with one hospital for such purposes.

The absolute necessity for greater attention being paid to this subject, will appear evident from this, that on all occasions the constant expence attending every establishment for their cure, without attention to the removal of their cause, is enormous. Sa-

salaries to individuals employed in these places, the expence of the different articles of clothing, of provisions, wine, medicines, &c. is continual and excessive. The whole expence; on the contrary, for their prevention, principally rests in the salaries of the officers of police, and the trifling losses individuals may sustain from the removal of what such officers may deem causes of disease.

Unless, indeed, the most effectual means are adopted for the removal of the causes of fevers, in London, for instance, where at least forty thousand are annually affected by them, the expences attending the support of fever-houses for such immense numbers, could not be submitted to by the public. Hence a police for the entire removal of these sources is, if we wish to effect any permanent benefit by our exertions, absolutely necessary. On a moderate calculation, a fever-house, where thirty patients unable to work at any employment, are supported at the expence of less than 2s. 6d. daily, every thing included, will cost at least fifteen hundred pounds annually. Even such a sum annually expended for the purpose of employing proper officers to report to a committee the state of the sources which in every city cause perhaps twenty

times more diseases than those above stated, would, in a great measure, be sufficient to remove both these sources, and the diseases which they occasion.

In the prosecution of such a plan, it will be necessary to attend to the following objects; its detection, its removal, the cure of infected persons, and the purification of infected places.

But before such measures can be adopted as will render any institution of this kind permanently beneficial, the physical power, as well as moral influence of the country, must combine to enforce the salutary employment of such antidotes to infection as shall be deemed necessary and proper. And even then, it has justly been observed, that joint exertions will scarcely be sufficient to overcome the influence of indolence, ignorance, habit, and necessity, which so generally prevent the attention necessary to preserve health, and to oppose the generation of disease.

A council of health ought to be established, consisting of some of the principal members of the Legislature, some of the chief magistrates of each city, and several medical attendants; and this body should be entrusted with such powers as might enable it to see all its orders executed with impartial

justice, as well as that no unnecessary hardships be, under any pretence, inflicted.

This body ought to appoint inspectors of the medical profession, whose business it should be, not merely to see whether the rules for the prevention of disease be carried into execution, but whether they be adequate to produce the effect intended.

The measures to be adopted for this purpose cannot be effected without interfering with private property and domestic arrangements, while much expence must necessarily be incurred. A rational plan, then, of medical police cannot therefore be carried into execution without the aid of the Legislature.

A series of plain and obvious instructions for the poor; in particular, should be drawn up, and left in every house, and a punishment inflicted for inattention to them.

The officers of medical police ought, then, as already said, to consist of a sufficient number of medical men for the cure of diseases, and a number of others, whose duty it should be to superintend the state of those parts where diseases are most likely to be propagated.

The inspectors should see that every part of the soil which, from various circumstances, may emit effluvia, destructive of health,

be completely remedied ; that the vitiated climate may be purified, and prevented from again being put in that state, since we find that different countries, according as these measures are adopted or neglected, are healthy or otherwise ; that all low-lying and damp situations should be abandoned, and a preference given to those of moderate height.

The inspectors should also see that the size of the houses, and of the individual apartments, be properly regulated, and the size and situation of the doors, windows, and chimneys, be strictly attended to, and no paper or cloth be used for covering the walls of rooms, particularly among the lower orders of society ; for they serve greatly to confine a great proportion of noxious effluvia ; and that areas, yards, and courts, be large and well ventilated, and the lanes, alleys, &c. be wide in proportion to their length, and the number of inhabitants they contain : That all occupations, where the health is likely to be injured, be strictly attended to, so that the dangers inseparably connected with them be not unnecessarily augmented by want of cleanliness, &c. : That the modes of living, particularly among the lower orders of society, be in some measure examined, and regulated with that spi-

rit of moderation which would soon put to silence the complaints of those who fell immediately under such a scrutiny, and convince them, that it was not by the iron rod of oppression they were to be swayed, but by the soft and persuasive advices of friendship : That the extensive department of *manners* be strictly attended to in every rank, and if found vitiated, nasty, and consequently productive of disease, be prohibited, and even punished.

Before the complete removal of contagion can be effected in large cities, the entire destruction of many houses must be absolutely necessary ; but still more than their expence is daily consumed by the inactivity of the diseased, and the money necessary to procure medicines, &c for their recovery.

The public at large, out of respect to themselves, as well as others, should therefore be solicited to give the earliest information of the existence of contagion, that its ravages may be suppressed, and its causes instantly removed.

The additional expence which every family is put to where contagious diseases have made their way among them, must especially have been severely felt by many, whose income is unable to support such expence, while their situation in life prevents them

from sending their sick to an hospital. A tax, therefore, imposed on individuals according to their income, or their situation in life, for the purpose of suppressing the sources of such disease, must not only be productive of a considerable saving to all parties, but also of the most marked advantage in the preservation of the health of those whose lives may be widely useful to society in general. This, while it would be a species of taxation to which none could object, would at the same time leave the most favourable impression on the public mind. It would, in fact, illustrate that which ought to be the very nature of all taxation, namely, a public contribution for a public service.

For the prevention of disease, and the consequent inutility of hospitals, I may again remark, that the late Dr. Currie ingeniously observes, that "this is a prospect in which the philanthropist might indulge with more safety, if he could calculate with equal confidence on the *wisdom* as on the *power* of his species."

It is not, then, by any partial exertion on the part of the Legislative body of our country, that we are to expect those important benefits to which I have alluded. A combined and determined effort, conducted with the

greatest energy and vigour, and under the immediate observation of those who are previously known to possess the ability to execute such important duties, can alone effect such an important purpose.

Till men of liberal principles, who may fill offices of trust more for the purpose of benefiting their country than that of enriching themselves, are charged with the fulfilment of such duties as I have frequently alluded to, they never can be performed; and while these important duties are overlooked, the motives of those in power cannot be misunderstood.

Resolutions upon too contracted a plan, and efforts of an imperfect nature, must be productive of benefits much more limited and ineffectual than when these plans are fully adequate to the necessity for their institution.¹ In the former case, they never answer the end for which they were formed; for while, in one part of a city, we are using every effort to destroy contagion, in the other parts it is daily gaining ground; in the latter, every good purpose for which such institutions were made is reaped from them; while the comparative expence of these two states, where the benefits are only apparently, and where they are completely reaped, is extremely trifling.

Although, perhaps, under the best regulated police for the prevention of disease, we may not entirely effect our purpose ; yet surely, by these means we may lessen diseases both in number and in severity.

I am conscious, that my present proposals of improvement will, in many instances, meet with the most violent opposition ; that the severest strictures from interested and angry parties, will, from selfish motives, or private malevolence toward the author, be secretly poured out against them, which those who make a trade of such vile practices well know has much effect on the world in general. But, if I obtain the approbation of those who are well-wishers to the suffering part of the community ; who trace human distress into every corner, visit it in every hut, and who, with pity, see the merciless hand of pestilence press heavy, often on the most valuable lives ; though such are always in the minority, I shall reckon their approbation a sufficient recompence for my labours : Nor shall I conceive that my endeavours have proved unavailing, if I should only be able to excite to the prosecution of this important subject, gentlemen who may happily possess more ability to command a successful result to their patriotic labours.



